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1977

Slough, Dennis
Wales Creek
recreation
inventory

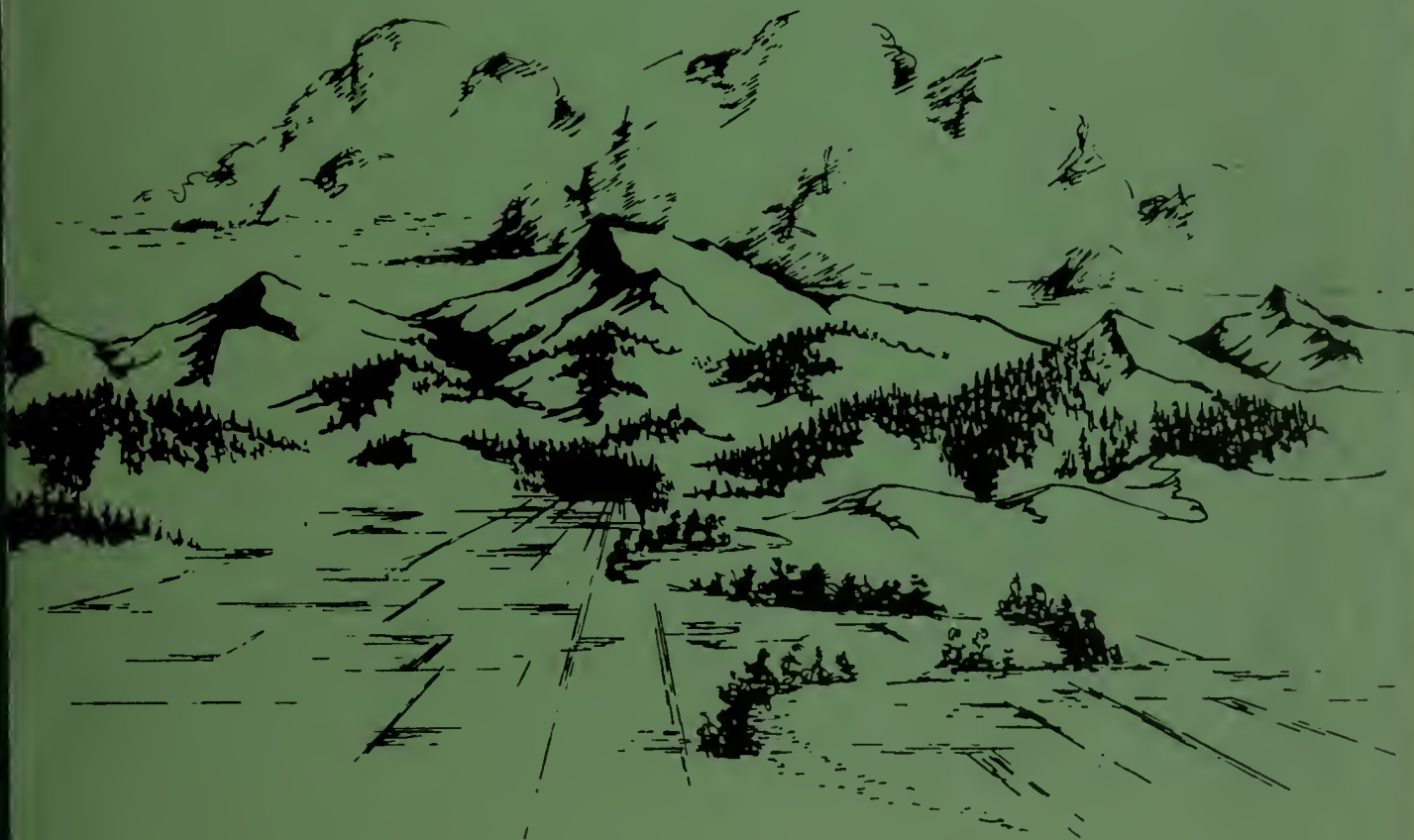
Wales Creek Recreation Inventory

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Resources Development Internship Program
Western Interstate Commission for Higher Education

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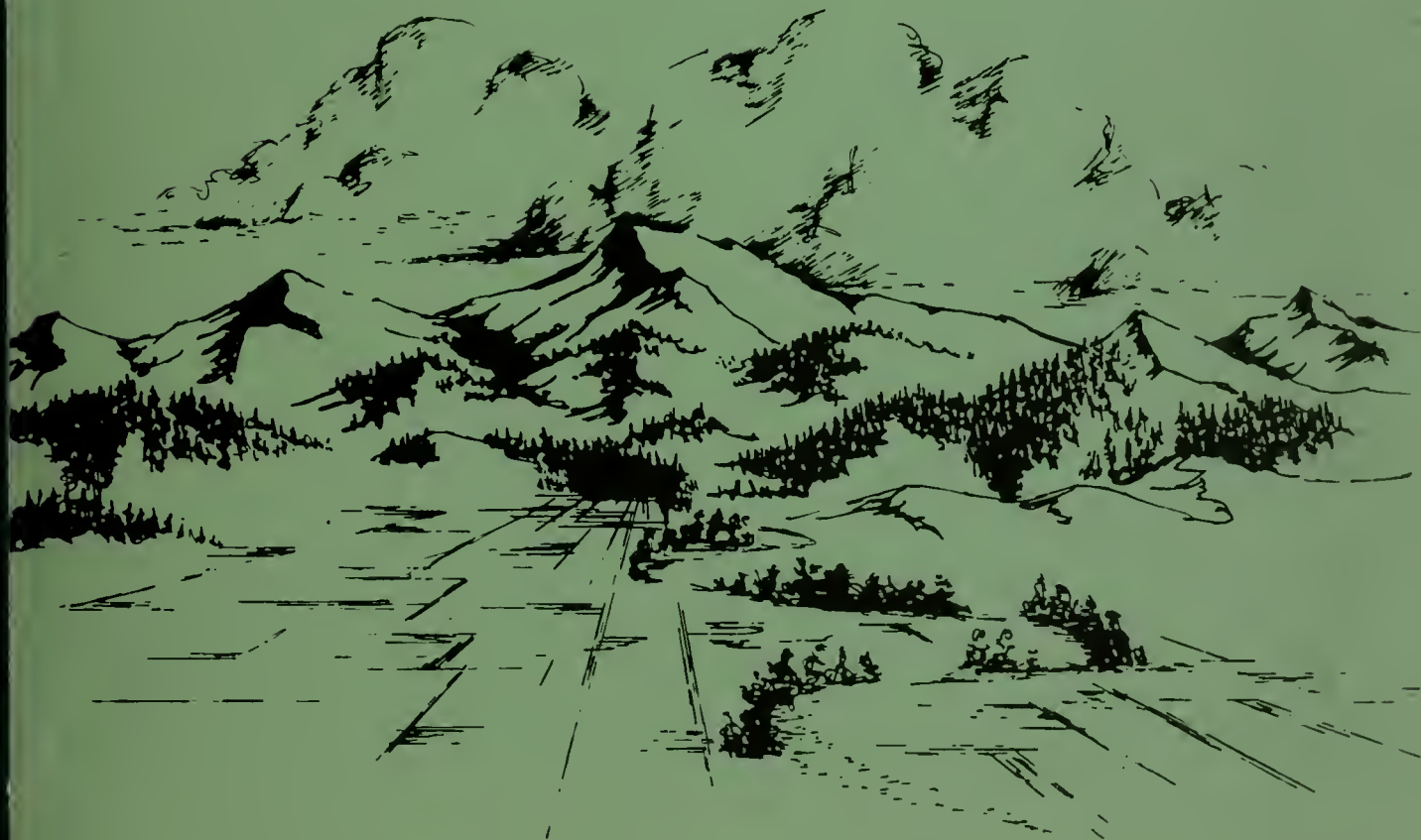
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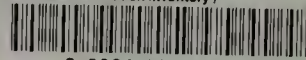
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WALES CREEK
RECREATION INVENTORY

Dennis Slough
Butte District
Bureau of Land Management
Missoula, Montana
September 5, 1977

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1/17/2020

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ABSTRACT

The purpose of this project was to gather basic resource data, to analyze, evaluate, organize, and describe this data, to make note of resulting patterns and associations, and to determine from this information analyzed opportunities for quality recreational experiences. Recreation is an emphasis in this report. Scenery is the second emphasis.

This report's study area, the upper portion of the Wales Creek drainage, Powell County, Montana, encompasses 6100 acres of the Garnet Mountains. It is an unroaded and undeveloped watershed.

A healthy population of moose, a hot springs, fire influenced vegetation, and undulating mountain terrain are the four major scenic and recreational characteristics of the study area. Large populations of elk, deer, bear, and grouse add to its already significant recreation value.

Presently, hunting is the main recreation activity pursued in the drainage.

Because the study area meets all of the criteria named in the Wilderness Preservation Act of 1964, one of the recommendations made in this report is for studying Wales Creek's inclusion in the Wilderness Preservation System. This report recommends, for the present, managing Wales Creek as a Primitive Area. Companion reports written by Keith Boggs and Mike DeMunn on the drainage's wildlife values and timber values, offer additional information.

ACKNOWLEDGEMENT

A special thanks to my wife, Rebecca, for proofreading this report.

GENERAL DESCRIPTION

GEOGRAPHY

Location

Wales Creek is in west central Powell county, Montana. It is one hundred and fifty miles west of Great Falls, forty-two miles by road east of Missoula, and five miles southwest of Ovando and Highway 200. Its watershed lies thirty-six miles west of the Continental Divide. The waters flow into the Blackfoot River, a tributary of the Clark Fork of the Columbia.

This report's study area, the upper portion of the Wales Creek drainage, encompasses 6100 acres of the Garnet Mountains. The Garnet Range runs in a northwesterly direction from Deerlodge Valley to Ovando and Blackfoot Valleys. Wales Creek flows east from the north end of this range.

The stream begins on a ridge extending through Chamberlain Mountain and connecting Elevation and Granite Mountains, three locally prominent peaks. Other streams from this ridge include Frazier and Yourname Creeks which flow east, north and south of Wales Creek, respectively. Flowing north from this ridge are Chamberlain and Pearson Creeks; Elk Creek's north fork flows west (see location maps).

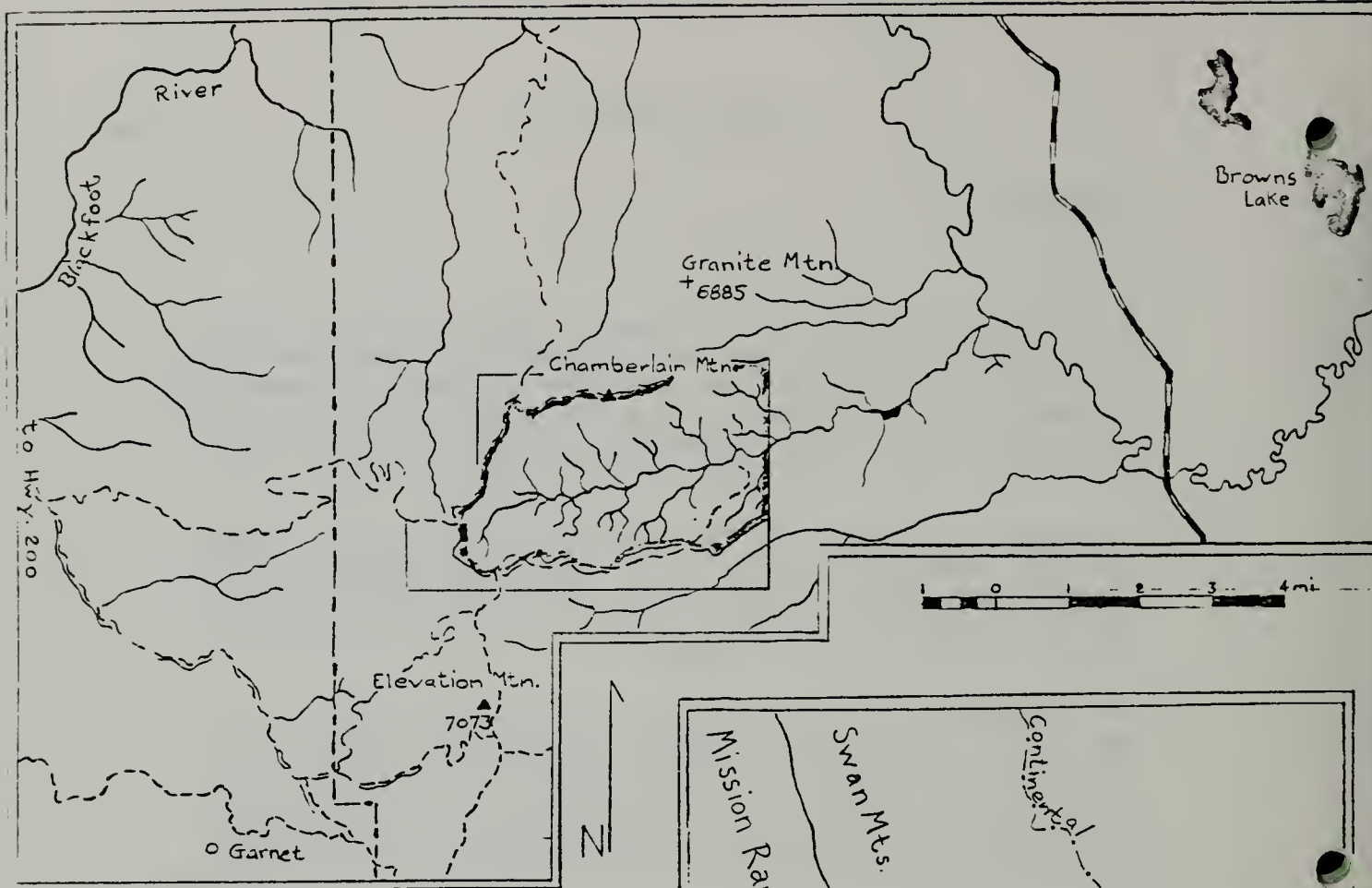
This report's study area is within the Bureau of Land Management's Blackfoot Planning Unit, administered by the Garnet Resource Area of the Butte District.

This drainage receives about sixteen inches of rain annually. The wettest months are from mid-winter through early spring. Because of the drainage's close proximity to the Divide, the wettest month varies. Most of the precipitation is in the form of snow accumulating to a depth of about six feet at the top of the watershed in mid-winter. During the colder half of the year, precipitation is continuous for hours at a time and most days are cloudy. In the warmer half, short and sudden thunderstorms prevail, preceeded and followed by sunny weather. The average January temperature at Ovando is -13.8°C (15.4°F). The average July temperature is 16.7°C (61.7°F). The record high and low is 99°F and -52°F , respectively. The warmest days are followed by pleasantly cool evenings. 1/

THE BASIC RESOURCES

Geology

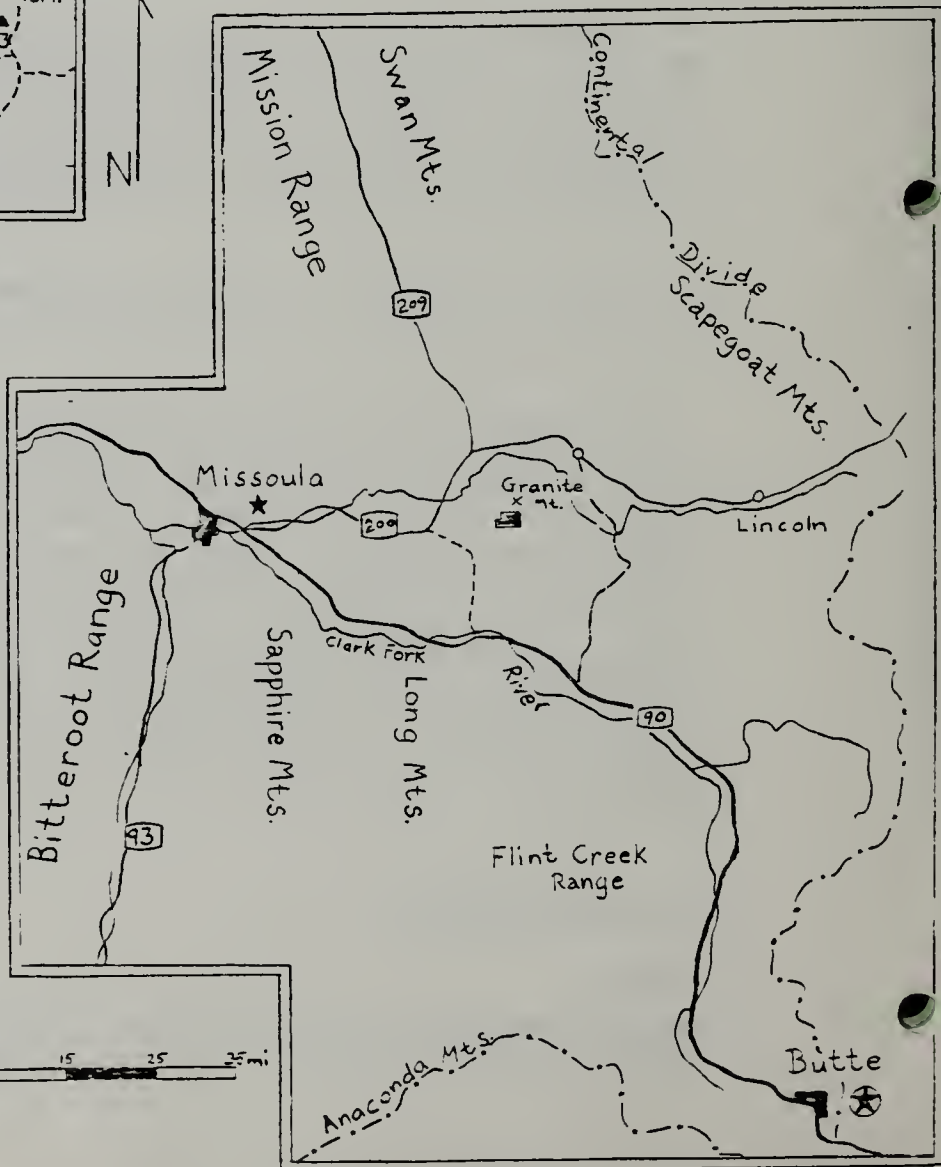
Whereas 600+ million year old Beltain sandstones underlie the mountain north and south of the drainage, Wales Creek is



- ✱ BLM District Hdq.
- ★ BLM Area Ofc.
- Unimproved
- ▬ Improved, graveled
- 93 Highway, rte. number
- Towns and cities
- .-.- Continental Divide
- - - Missoula-Powell county line

0 5 15 25 35

LOCATION



underlain by Tertiary granodiorite, 40 million year old intrusive rock. Much of this granitic bedrock is exposed throughout the watershed, but especially in the side drainages north of the stream. Approximately one-third of the land area in two small side drainages near the eastern property line is outcropped bedrock.

Granodiorite occurs as stocks or dikes and major ore deposits are sometimes associated with it. Granodiorite weathers to a spheroidal boulder producing easily erodable soil. Two soil associations occur in the Wales drainage. The upper one-third of the study area, including Chamberlain Mountain and meadows, and the Elk Creek burn, is the Winkler-Bata-Rockland Association. These soils are well-drained, sandy and gravelly loams of the alpine glaciated region. They are twenty to sixty inches in depth with a considerable amount of outcropping bedrock. The lower portion of the study area and the valley walls are of the Trapper-Garnet-Loberg Association. These are well drained loam and gravelly-loam soils on mountain slopes, underlain by rhyolite. They are thirty to sixty inches in depth, shallower soils are found on steeper slopes. 2/

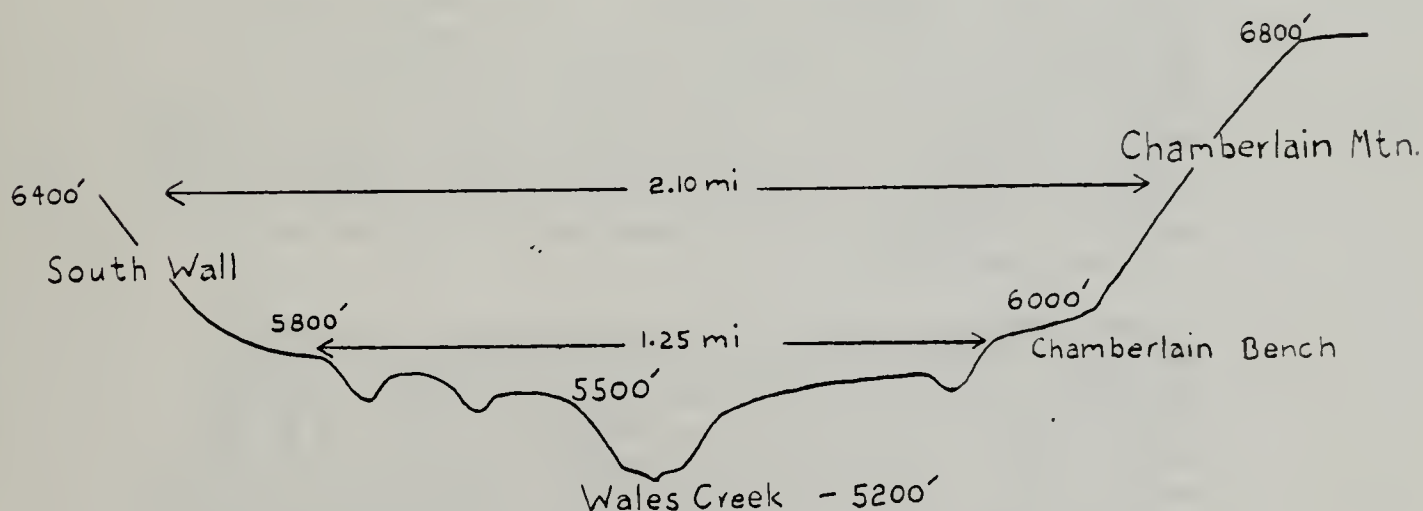


Figure 1: Profile of Middle Wales Creek

TOPOGRAPHY

This illustration represents the exposed profile of a north-south

transit which passes through the drainage and the top of Chamberlain Mountain. On this line the south wall of the drainage, a mountain ridge, is 6400 feet high. From this contour down to 5800 feet, the slope is smooth and between twenty and twenty-five percent. Beginning at 5800 feet, a gentler, but more irregular slope prevails to about 5500 feet. Aspect changes five times in a half-mile. Three hundred vertical feet of smooth twenty percent slope separates the 5500 feet contour from the stream bottom. From the stream bottom north to 5600 feet, the slope is irregular and moderately steep, about twenty percent. Aspect changes three times through here. From 5600 feet to 5800, the slope is smooth and very steep, about fifty percent. A small, flat area occurs on the line going north between 5800 feet and 6000 feet, at which point the south face of Chamberlain Mountain, 800 vertical feet of smooth slope, begins. It abruptly culminates with a sixteen acre flat surface, disrupted only by a small pile of fractured bedrock, the peak of Chamberlain Mountain.

This vertical profile represents the topography of the entire drainage. That is, 400-600 feet of steep, smooth slopes from the watershed's ridge tops down, followed by 200-400 feet of gentle, but irregular slopes with a frequently changing aspect, and 300-400 feet of steep, smooth sloped terrain concluding at a narrow stream bottom; that is an average of 1000 vertical feet from the ridgetops to the stream bottom (the horizontal distance from the ridgetop to the stream bottom averages 5000 feet on the south side and 8000 feet on the north side). Important variations occur, however, toward both the west and east ends of the study area.

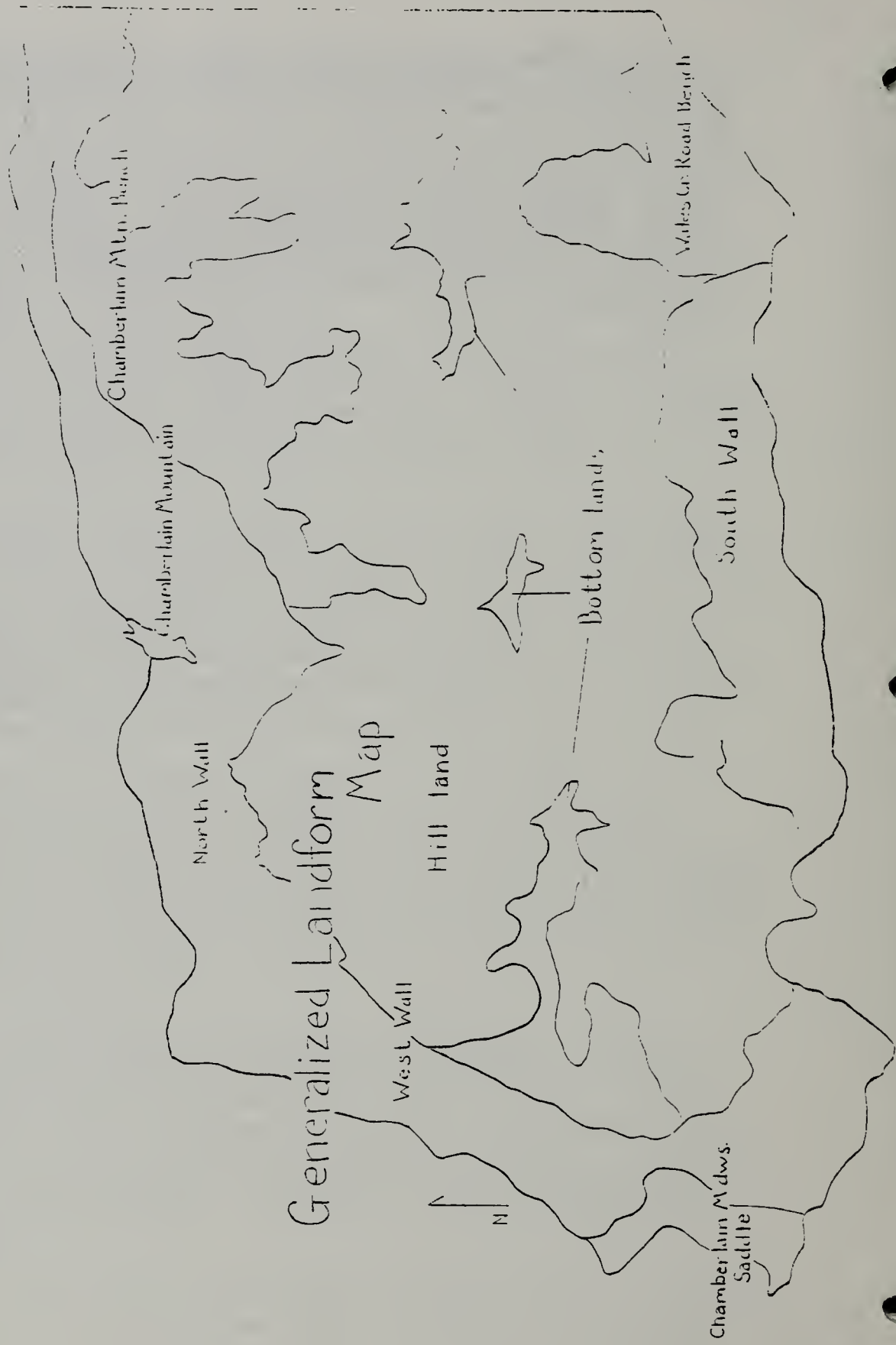
At the foot of Chamberlain Mountain, in the northeast part of the study area, an expansive bench occurs, interrupting an otherwise steep slope. Almost two miles long and from two to eight-tenths (0.2 - 0.8) miles wide, this large flat area contrasts sharply with Chamberlain's steep southeast face. Below the bench, moderate to steep slopes continue to yet another large, relatively flat area, about seven-tenths of a mile long and averaging three-tenths of a mile wide. Another steep drop of 200 feet ends at a narrow stream bottom.

In the southeastern quarter of the study area, a large gentle and smooth sloped side drainage helps to exaggerate the rugged terrain characteristic of the rest of Wales Creek. A steep, smooth sloped isolated mountain, rounded at the top, is at the head of this side drainage. This mountain is an important landmark in the drainage, second to Chamberlain Mountain. (The third most important landmark, Granite Mountain, lies outside of the drainage's boundaries. The portion of the Elk Creek burn, which lies in the drainage, is the fourth most important orientation point.)

At the west end of the drainage, the terrain is more irregular than that previously described. Small isolated hills, winding ridges

and stream bottoms, gentle to steep, irregular slopes, and constantly changing aspects are characteristic of this rugged area. Only near the drainage ridgetops do the steep slopes become regular.

The three moderate-sized flat areas in the drainage's bottom lands are the result of three constriction points. There, erosion resistant rocks have slowed the stream enough to allow deposition of sediments. Remnant stream beds in the central meadows (the middle flat area) are evidence of the process of filling in the valley bottoms.



Vegetation

The principal canopy and subcanopy species in Wales Creek are, in order of quantitative importance:

| | |
|------------------|------------------------------|
| Lodgepole pine | <i>Pinus contorta</i> |
| Douglas fir | <i>Psuedotsuga menziesii</i> |
| Western larch | <i>Larix occidentalis</i> |
| Subalpine fir | <i>Abies lasiocarpa</i> |
| Engelmann Spruce | <i>Picea engelmannii</i> |
| Ponderosa pine | <i>Pinus ponderosa</i> |
| Spruce, other | <i>Picea</i> spp. |
| Quaking aspen | <i>Populus tremuloides</i> |

The principal shrub species, in a rough order of quantitative importance are:

| | |
|-------------------|------------------------------|
| Sitka alder | <i>Alnus sinuata</i> |
| Willow | <i>Salix</i> spp. |
| Menziesii | <i>Menziesii</i> |
| Woods rose | <i>Rosa woodsii</i> |
| Hawthorn | <i>Crataegus</i> spp. |
| White spirea | <i>Spiraea betulifolia</i> |
| Ceanothus | <i>Ceanothus relutinus</i> |
| Snowberry | <i>Symphoricarpus albus</i> |
| Ribes | <i>Ribes</i> spp. |
| Juniper | <i>Juniperus communis</i> |
| Serviceberry | <i>Amelanchier alnifolia</i> |
| Red osier dogwood | <i>Cornus drummondii</i> |

The principal herb species, in a rough order of quantitative importance are:

| | |
|---------------------|--------------------------------|
| Grouse whortleberry | <i>Vaccinium scoparium</i> |
| Beargrass | <i>Xerophyllum tenax</i> |
| Huckleberry | <i>Vaccinium globular</i> |
| Kinnikinnick | <i>Arctostaphylos uva-ursi</i> |
| Oregon grape | <i>Berberis repens</i> |
| Twinflower | <i>Linnaea borealis</i> |
| Arnica | <i>Arnica cordifolia</i> |
| Fireweed | <i>Epilobium angustifolium</i> |
| Princes pine | <i>Chimaphila umbellata</i> |
| Strawberry | <i>Fragaria</i> spp. |
| Yarrow | <i>Achillea</i> spp. |
| Pearly Everlasting | <i>Anaphalis margaritacea</i> |
| Elephanthead | <i>Pedicularis groenlandic</i> |
| Arrowleaf groundsel | <i>Senecio triangularis</i> |

Grasses were not identified, even though areas of considerable size contained them. The grasses common to this life zone are Pinegrass, Bluebunch Wheatgrass, Idaho Fescue, Rough Fescue, Cheatgrass, Junegrass and Timothy.

Because fire has played a major role in determining the present vegetation in Wales Creek, ecological rules of thumb as to what species should be on what aspect at what elevation are not reliable. The result of the fires, most occurring around the turn of the century (the last two major fires were in 1927 and 1961), is a patchwork of age and density variant stands of lodgepole pine found on all aspects and at all elevations throughout the drainage.

Douglas fir, the second most abundant tree species in the drainage, occurs most often with other tree species in uneven aged stands. The largest homogenous stand of Douglas fir, a mature park-like stand, is only fifty-two acres and occurs along Wales Creek road in the southeastern quarter of the study area. Other small stands occur in the side drainage bottoms south of Wales Creek.

Subalpine fir, Englemann spruce and Western larch occur in the drainage in approximately equal abundance. Subalpine fir and Englemann spruce occur in the stream bottoms at the western end of the study area and along the top of the drainage's south ridge, above 6000 feet. Larch occurs in small homogenous stands and with other species in uneven aged stands below 5400 feet. It occurs on the following north facing slopes: (1) In the side drainage south of Wales Creek and adjacent to the eastern property line (eastern $\frac{1}{2}$, section 12); (2) Just above the stream in the side drainage north of Wales Creek and adjacent to the property line (north $\frac{1}{2}$, section 1); (3) On the steep slopes above Wales Creek in sections 11, 12, and 4, and in the side drainage in the western half of section 12.

Ponderosa pine is sparsely represented in this drainage, and only in the easternmost half-mile of the study area. There are aspen stands in the meadows of the rocky side drainages in the northeastern quarter of the drainage, but more often aspen is associated with the talus on south facing slopes.

The pattern of the ground vegetation conforms to expectations. Density is greater on the wetter north facing slopes and where the canopy is sparse; density is least on the driest slopes and where the canopy is thick. Because aspect and canopy cover is constantly changing as one moves through the drainage, so the complexion of the undergrowth is constantly changing (see habitat section for a more complete description of the vegetation).

WILDLIFE

The following big game species were sighted in the drainage during the summer: moose, elk, mule deer, whitetail deer, black bear, and coyote. In addition, evidence of mountain lion was found. Other game animals sighted were blue, ruffed, and spruce grouse; green winged teals and a mallard; cottontail and snowshoe hares. Fur-bearers and rodents either sighted or evidenced included

beaver, martens, weasels, marmots, golden-manteled and Columbian ground squirrels, least and yellowpine chipmunks, porcupines, and gray squirrels. Hawks sighted were: redtail, Swainson's, sharp-shinned, Cooper's, goshawk, ferruginous, and American kestrel. The most frequently sighted raptors were the turkey vulture and the great horned owl. Water birds sighted were great blue herons and belted kingfishers. Some of the other birds sighted in the drainage included ravens, gray jays, Clark's nutcrackers, pileated woodpeckers, common flickers, nighthawks, loggerhead shrikes, rufous sided hummingbirds, juncos, warblers, chickadees, and creepers.

While the entire drainage is used in some degree by most of the species listed, certain locations are more heavily used and successful observation here is promising. For beaver, ducks, hawks, and other birds, and big game, the beaver ponds area is an excellent location. The hot spring meadows attract hawks and big game, particularly moose. The Burn is the most promising location for viewing birds and is a good location for moose and elk. The north ridge wall, Chamberlain Mountain, and the meadows at the foot of Chamberlain Mountain are good locations for viewing elk and mule deer. And the meadows along Wales Creek road are good locations for seeing Mule and whitetail deer.

METHODOLOGY

PURPOSE

The purpose of this project was to gather basic resource data, to analyze, evaluate, organize and describe this data, to make note of resulting patterns and associations, and to determine from this information analyzed opportunities for quality recreational experiences. A quality experience requires an opportunity to participate and excel in a preferred activity in pleasant surroundings.

Recreational Opportunity, a composite resource, is an emphasis in this report. Scenery, also a composite resource, a combination of the basic resources geology, topography, vegetation, and wildlife is the second emphasis in this report. Land capability will be considered when determining the quantity of quality recreational experiences afforded.

This report will conclude with recommendations for the management of recreation use in the Wales Creek drainage based on the evaluation of the collected data and my personal knowledge of the watershed.

FIELD WORK

Living in the Drainage

Because the driving time from Missoula prohibited commuting, we, the interdisciplinary team inventorying timber, wildlife, and recreation, camped in the drainage (June 27-September 5). I worked most of the summer out of a camp near the end of Wales Creek Road. The other members of the team camped about a half mile upstream. A third camp located at the head of the drainage served each of us at various times during the summer. Living in the drainage enabled us to make round-the-clock observations of the natural and human activities in Wales Creek. The following items were carried in the field for use in inventorying the recreational opportunities and scenery: binoculars, compass, 7.5 minute topographic map, camera, field guides to birds and plants, pen, clipboard, and worksheets.

Worksheet

A worksheet (see sample on page 11) was developed in order to standardize note-taking and thereby minimize the chance of neglecting any important details of the landscape. There are three parts to the worksheet:

(1) Basic Resource Data and Accessory Information

Day, Time and Weather, were recorded in order to assist in recalling a sense of place and view and to easily coordinate the notes with my journal. Place code coordinates the notes with the topo map. Slope, Aspect, and Elevation were recorded along with the Type and Density of the vegetation and the Texture and Stability of the soil. This information was used to determine land capability to withstand recreation uses.

| Day | Plc Cd | Obs Ps | Drcn | Topo | Vgtn | Soil |
|------------|--------|------------|------|------------|-----------------|---------------|
| Thurs 7-14 | | Inferior | | Slp < 5% | Typ Alder-grass | Txtr |
| Time 11:00 | | foreground | | Aspct — | meadow- | silty clay |
| Wthr Sunny | C | restricted | | Elev 4960' | Dnstr Alder 15% | Stbly |
| Clear | | limited | | | | good, locally |
| Cool | | | | | | wet |

Landscape Fea Pan Enc Foc Can/ Det

Ø Form immediate ridges Ø Sptl Dftn hot spring meadow

Size/ Scale 100 yd. long x 30-50 yd. wide x 150 ft. high @ edge.

Ø Cont Dist X

Ø Sur Varia — smooth floor, slightly bowl shaped; moderately-regular sloped walls.

Ø Floor/ Wall — 1/4

Ø Encl & Floor — smooth grassy floor — moderate and regular sloped fir-lodgepole walls.

Fore-Mid-Back — meadow and enclosing hills — Chamberlain Mtn, seen through gap in meadow's W end — X (90% - 10% - X)

Activities

Fish — (3) small, good access Ski — (4) access to poor. Sight — (5) scenic forest opening
Bg Hu — (5) moose, deer Cllet — (2) low concentration Camp — (4) some conflicts with wildlife
Ub Hu — (4) in adjoining habitats Atv — (1) no access Fenc — (2) poor access
Prim — (4) scenic, only disturbance from grazing.

Comments This large centrally located meadow is joined at east end by side-drainages # 3 & # 8. Warm springs flow from south hills through meadows — moose created wallows of these warm water streams. Excellent probability of seeing moose & deer. Mixed age & species stands to south, lodgepole to north. Small historic camp and corral remains are found in the meadow's west end. Good trails lead to turn west, east and south.

(2) Landscape (Scenery) Data*

The observer's position in the landscape has great importance in determining what type of landscape is observed. Superior positions, vantage points, generally afford a panorama whereas normal and inferior positions do not. Detail in the landscape is emphasized in the two latter positions. The observer's position is recorded on the worksheet.











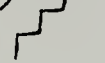
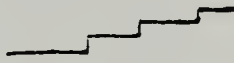






One or several of the following landscape compositional types are chosen to represent the overall view. In a feature landscape, lines of attraction converge on a single element. Panorama gives one a feeling of considerable distance and horizontality. Enclosures, bowl-like forms, have lines of attention directed first to the center and then to the walls. In a focal landscape, a series of parallel elements appear to converge. In a canopy/detail landscape, the understory dominates the view.

Convex elements within the landscape such as ridges, mountains, hills, crests, cliffs, escarpments, and trees are listed in the space entitled Form. In a space entitled Spatial Definition, concave elements, such as canyons, ravines, pockets, dales, meadows, and glades are listed.

The relative sizes of the forms and/or spatial definitions, the absolute size of any enclosures, and the distance to any features within the landscapes are recorded under Size and Scale. Contour Distinction and Surface Variation describe further the forms and spatial definitions within the landscape. Under the former, exaggerated ridge lines and gullies are noted. Under the latter, a set of standard topographical terms are used. (See figure on next page.) Floor/Wall is a ratio comparing a spatial definition's floor space (width or diameter) to the height of it's walls. The smaller the fraction, the more pronounced it's definition. The nature of the floor's surface and the enclosure's edge is described under Enclosure and Floor.

* A scheme for describing the scenery was adopted from the U.S.F.S. Research Paper PSW-49 on an experimental basis in the hope that it might standardize the notes and make the process of evaluating scenery less subjective. The scheme did standardize the note taking process, but did not lend itself to a meaningful tabulation of the results because landscapes are nodal rather than evenly spread; an average landscape does not exist and it is impractical to try and record every setting. The nature of landscapes does not lend itself well to generalizing compilation; too much detail is left out and the method loses its original value. I discovered that this method is more appropriately confined to site-planning roads, trails, campsites, picnic areas, and other intensive use units. But, jargon is fundamental to every discipline. It is developed so one might describe in a few words what would take the standard vocabulary thousands. By adopting the vernacular proposed by the U.S. Forest Service and the University of California at Berkeley, College of Environmental Design, I was able to more effectively describe certain outstanding settings in the drainage. The landscape terms used in this report are defined here.

In a space entitled Fore-Mid-Back, the contents of the landscape foreground, middleground, and background are listed. Foreground is defined to be the landscape seen within one quarter of a mile. Middleground is that part of the view which is between one quarter of a mile and three miles away from the viewer. Background is that part of the scenery beyond three miles. Each sight region's percent of the total view is recorded on the worksheet.3/

| | Steep | Gentle |
|----------------------------|---|---|
| (A) Simple Surfaces | | |
| (1) Smooth |  |  |
| (2) Concave |  |  |
| (3) Convex |  |  |
| (B) Regular | | |
| (1) Rolling, undulating |  |  |
| (2) Cuestaform |  |  |
| (3) Stairstep |  |  |
| (C) Generally irregular | | |
| (1) Irregular |  |  |
| (2) Corrugated (dune-like) |  |  |
| (3) Rough |  |  |

Standard Topographical Terms Used 4/

(3) Activities Data

The forest recreation activities listed on the worksheet represent the major recreation uses that are being considered for Wales Creek in this report. Other important forest based uses, nature study and photography, backpacking, hiking, and mountain climbing, were considered secondary pursuits and were represented by those activities listed, excluding picnicking; a set of uses on the social end of the preference spectrum is represented by picnicking. The activities and the quality criteria sought for each are:

- 1) Fishing: Access, catchsize, probability of success, opportunity for secondary pursuits.

- 2) Big Game Hunting: Variety and quality of game, probability of success, access, secondary pursuits.
- 3) Upland Bird Hunting: Variety and quality of game, probability of success, access, secondary pursuits.
- 4) Primitive: Remoteness, amount of human use, degree of non-compatible uses, secondary pursuits.
- 5) Skiing: Terrain and surface, access/remoteness, secondary pursuits.
- 6) Collecting: Probability of quality success, access, secondary pursuits.
- 7) All Terrain Vehicles: Roads necessary, road surface, potential conflicts, secondary pursuits.
- 8) Sightseeing: Uniqueness, naturalness, attractions in view, size of view.
- 9) Camping: Terrain and surface, access/remoteness, conflicts, secondary pursuits.
- 10) Picnicking: Access, terrain and surface, secondary pursuits.

On the worksheets each setting was classed for each of the listed activities according to the following scheme:

- 1) Negative - No opportunity for use.
- 2) Poor - Not a recommended use.
- 3) Fair - Use would require substantial expenditure for improvement or a lessening of normal expectations.
- 4) Good - A recommended secondary or multiple use.
- 5) Excellent - A recommended primary or multiple use.

In the final section of the worksheet, entitled Comments, a summary of the preceding three sections along with additional information collected, evidence of human use, water data, potential use conflicts, and visible discord elements completes the worksheet.

Overlays

From the worksheets, and from information recorded on the 7.5 minute topo map carried in the field, a set of mylar overlays was developed in order to separate, and thus accentuate the chosen variables access, observation points, attractive features, habitat types, land forms, side drainages, isolated peaks, slope classes, and section lines. Each overlay was analyzed for important patterns. Combinations of overlays were analyzed for important associations. The finished set of overlays,

alone and in combination, became the worksheets from which the maps in this report were made. The base map for these overlays is the southeast corner of the Bata Mountain Quad (MT-7.5 minute topographic series) and the southern one third of the Chamberlain Mountain Quad.

BLM Quality Evaluation of Recreation Use Opportunities

The BLM Recreation Information System (RIS) was used to evaluate the quality of recreation opportunities in the area.

The objectives of the Bureau of Land Management extensive phase of the Recreation Information System (RIS) are: 1) to bring the recreation data inputs up to an accepted quality level, 2) to delineate areas where detailed planning and management is needed, and 3) to identify planning priorities within the range of recreation activities afforded by an area. 5/

Explanation of Evaluation Procedures. The purpose of the quality rating procedures is to rate the quality of experience a visitor can expect while participating in a specific recreation activity, i.e., fishing, hunting, etc. This in no way infers that a quality rating for fishing, for example, is a measurement of the total experience that a person can expect while fishing in an area. The total experience is a composite total of all the recreation use opportunities that a person can expect to experience in a given area. As far as possible, the evaluation procedure is structured to rate specific recreation activities. However, for opportunities such as primitive area use and float boating, there is no single measurable activity but, rather, it is composed of a series or combination of opportunities. Therefore, those activities are exceptions in that the quality evaluation is a measurement of the total experience. 6/

I N V E N T O R Y

The following narratives are intended to emphasize the important recreation and scenic opportunities.

HABITATS

From the southwest edge of Chamberlain Mountain's flat top, one may view the entire drainage. The low oblique view afforded allows one to see the stream bottom which is 1800 feet below and over a mile away. The view is similar to that afforded a viewer in an airplane. One first notices the undulating terrain of Wales Creek but thereafter attention is directed toward the vegetative pattern which gives the rolling land texture and sometimes exaggerates the relief. The habitat map (see overlay # 1) is an attempt to portray that pattern as one on top of Chamberlain Mountain would see it. It is also a map of canopy/detail landscapes, or the scenery beneath the trees. Other important facts may be gleaned from the habitat map and its accompanying text, for example, critical wildlife areas.

(The numbers in parenthesis at the end of each description refer to the rating areas listed in the botanical sightseeing section of the Recreation Information System on page 27G).

1) Lodgepole Class I. This consists of dense stands of young trees and suppressed mature trees with no understory. Sight distance varies between ten and thirty feet. Two major stands and many smaller stands are found in the drainage; one stand at the end of Wales Creek Road, the other carpeting the long narrow bench at the base of Chamberlain Mountain's east face. (007)

2) Lodgepole Class II. The most extensive and variable habitat type in the drainage, covering about 40 percent of the land area, is moderately dense lodgepole. It is found on all aspects, at all elevations, and in all quarters of the study area. The largest continuous stands, however, are on the south facing slopes north of the stream. Ground-cover averages sixty percent; sight distance averages fifty feet. The major understory species are grouse whortleberry, huckleberry, beargrass, sedges, spirea, and arnica. Other species present in moderate amounts and sometimes locally abundant are menziesii, twinflower, Oregon grape, and kinnikinnick.

From an airplane or a vantage point, these two classes are indistinguishable with the exception of the stand of young trees at the end of the road, the result of a recent fire.

These two habitat types from above, form a uniform background on which the other habitat types stand out. From a normal position within a more spacious habitat, these surrounding dense stands resemble walls. Both habitats have low scenic and recreational values. (007)

3) Lodgepole Class III. Composed of well spaced trees, fifty to seventy five feet tall, this class of lodgepole is generally found on ridge tops and south facing slopes above 6000 feet, with two notable exceptions to this rule in the eastern quarter of the study area. The largest is a 630 acre stand along Wales Creek Road. The other smaller stands occur in the rocky side drainages of Section 1 -- these may be the result of human interference, e.g. thinning. Scenic, accessible, and used heavily by big game animals, these areas have high recreation values. The sight distance is 100 - 150 feet, the ground cover is 60 - 100 percent. The principal understory species are the same as those for Class II lodgepole. Other species abundant in certain locations are serviceberry, equisetum, alder, willow, menziesii, and ceanothus. From above, these stands of vertical straight-line forms contrast sharply with all of the other habitat types. (010)

4) Mixed Species. Within this classification are two distinct varieties differentiated primarily by moisture availability. Lodgepole, Douglas fir, larch, and ponderosa pine occupy the dry sites. Lodgepole, Douglas fir, larch, subalpine fir and Engelmann spruce occupy the wetter sites. Sight distance and wildlife use are the two most important variables. Both are greater in the drier sites. Groundcover is about the same but on the wet sites, more shrubs than herbs occur and deadfall is greater. The principal understory plants for both are arnica, huckleberry, spirea, grouse whortleberry, bear grass, sedges, alder, menziesii, willow, and saplings, with the latter four occurring in greater abundance on the wetter slopes. Scenic and recreation values are intermediate. (009)

5) Mixed Species Wet. The dominant tree species of this habitat are subalpine fir and Engelmann spruce, but lodgepole, Douglas fir, and larch also occur in significant amounts. Canopy cover ranges from ten to seventy percent with averages around fifteen percent, as a result of the two dominant tree's sparse crowns. The major understory plants are hawthorn, woods rose, alder, willow, and menziesii, reaching subcanopy levels. Ground cover is 100 percent and deadfall is sometimes stacked five feet high; sight distance is fifteen feet. This nearly impenetrable habitat is along Wales Creek, the draws of the north facing side drainages, and those of the watershed's west end. These stands appear dark green, blue, and black. They stand out in form and in color against the orange-green lodgepole. They are scenic and important wildlife havens but inaccessible for human use. (010)

6) Ponderosa Pine. This is one of the least represented habitats with only thirty acres in the drainage. The site, on the eastern edge of the study area, is dry and southfacing. The trees are spaced twenty to thirty feet apart and are sixty to ninety feet tall. Ground cover is fifty percent and low lying; huckleberry, spirea, serviceberry, kinnikinnick, and sedges are the principal species. Sight distance is 150 - 200 feet.

The scenic value of this small tract is high but because of its limited size the recreation value is low. (009)

7) Douglas Fir. Fifty two acres of mature park-like stands are located in the southwest quarter of Section 12. Canopy cover is thirty five percent allowing a strong light to filter through. Trees are well spaced, ground cover is moderate, and sight distance is excellent, 200 - 300 feet. Serviceberry, meadow rue, snowberry, huckleberry, menziesii, twinflower, prince's pine, arnica, beargrass, and sedges are all present. There is moderate use by elk and deer in this area. This stand's close proximity to other scenic stands, the size of the trees, the good sight distance, and the strong filtered light make this a valuable scenic and recreational site. Other smaller stands occur in the bottoms of the side drainages located in Middle Wales Creek. (011)

8) Larch. Small to intermediate stands occur throughout the eastern half of the study area. The trees are spaced fifteen feet apart, with a sparse canopy, light and sight distance, about 100 feet, is good, and ground cover is sparse. These stands are particularly important visual attractions in the fall when their needles change color. However, even during the summer, their light green needles contrast with the orange-green tint of the predominant lodgepoles. This habitat's scenic value is one of the highest values in the drainage. While sightseeing is high, other activities rate low. (013)

9) Engelmann Spruce-Subalpine Fir. Adjacent to and contrasting with the Burn is this sixty three acre stand. The canopy is sparse, the groundcover is moderate, and deadfall is heavy. Trees are spaced twenty feet apart, sight distance is about sixty to eighty feet. The stand continues further down stream interrupted occasionally by dense stands of lodgepole. Huckleberry, spirea, ribes, arnica, grouse whortleberry, equisetum, moss, and lichen are the major understory species. This scenic habitat is described further as an attraction on page . (011)

10) Most of the grassy meadows are in the north and east portions of the study area. They are relatively large and elliptic. Moderate to steep forested slopes which surround and define these enclosures are where lines of sight are first directed. Attention is then focused on the center. There the influence of grazing is noticeable but the effect is not displeasing. The scenic value of this habitat is high. Easy access and ease of movement within this habitat along with the variety and frequency of big game species give this habitat a high recreation value. (012)

11) Alder Meadows. These meadows are chiefly narrow and linear, the surface irregular and often moderately sloped. Alder occurs most in the south and west portions of the drainage.

Movement within this habitat is restricted and sight distance is limited. The alder and grass meadow habitats are closely associated, their common borders often intersect. Both sharply contrast with the canopied types. (008)

12) Burn. Alder, willow, yarrow, fireweed, elephanthead, twinflower, meadow rue, and sedges are found in the Burn along with young lodgepole pine and numerous snags. In the wet areas, vegetation density is high, in the dry areas, vegetation is sparse. Deadfall is heavy throughout the burn.

This habitat is frequented by moose and elk, bear, raptors, and song-birds. Access is fair to excellent.

This habitat is a distinct setting because of its uniqueness. It's recreation and scenic values are among the highest in the drainage. (012, 006)

(See either Keith Bogg's or Mike De Munn's report for more detailed habitat information.)

ATTRACTIONS

While the entire drainage is a destination in itself, certain attractive natural and cultural features within the drainage (see overlay # 2) are would-be destinations for most recreation visitors. If there were not now roads or trails leading to these features, there would be in the future as increasing numbers of users frequent the area.

- 1) Developed Hot Spring. Located on the side of a hill in the vicinity of the large central meadows, a half mile above the junction of Wales Creek with the Wales Creek Road, is an impounded hot water spring (45°C , 113°F). The pool at the source of the spring is about six feet in diameter. The heated water percolates up from the gravel floor of the spring, flows over the top of a man-made rock impoundment, and down the twenty percent slope of the hill. Three other warm springs and several warm water seeps are in the immediate vicinity.
- 2) Warm Spring # 1. A quarter of a mile southwest of the hot spring ($\text{NE}\frac{1}{4}\text{SE}\frac{1}{4}$, Sec. 11), warm water flows from a fractured rock outcrop twenty feet to the stream bed of a side drainage. A second smaller spring is located twenty five yards farther up the side drainage. A good trail connects these two attractions with each other, with the Wales Creek Road in two locations, and with the trail in the bottom of the drainage.
- 3) Warm Spring # 2. Over a mile away from the main thermal activity, located in a hidden side drainage ($\text{SE}\frac{1}{4}\text{SE}\frac{1}{4}$, Sec. 1), a significant source of warm water (27°C , 80.6°F) lies among boulders and mature larch and Douglas fir. From it's several sources, all within a forty foot diameter, the water descends a thirty foot, seventy five percent slope of moss and fern covered bedrock.
- 4) Chamberlain Mountain Peak. Midway along the drainage's north boundary ($\text{NE}\frac{1}{4}$ Sec. 3) lies Chamberlain Mountain at 6860 feet, the highest point in the study area and the fourth highest point in the Blackfoot Planning Unit. The peak is a thirty foot pile of fractured bedrock on the northwest side of a sixteen acre plateau. The 360° panoramic view from the peak includes the Mission, Swan, Bitterroot, Scapegoat, Anaconda, Sapphires, Garnets, Flint Creek and Long John mountain ranges. Most of Ovando and parts of the Blackfoot Valleys can also be seen. From a vantage point on the south edge of the plateau, the entire drainage is visible.
- 5) Beaver Ponds. One and three quarter miles above the junction of Wales Creek with the Wales Creek Road, is the location of a twenty acre elliptic enclosure featuring beaver ponds and numerous snags. The opportunity for viewing wildlife here is excellent. Moose, raptors, ducks, and song birds, as well as beaver, frequent the area. This enclosure is a threshold to a more primitive part of the drainage, as beyond the beaver ponds the trails become fragmented and the dense vegetation bars easy access.

6) Hot Springs Meadows. These meadows, forty three acres of dendritic enclosures, one third of a mile long and about sixty yards wide, are found in the northern half of Sections 11 and 12. Moose frequent these meadows, attracted by the mineral waters of the warm water seeps, and have created six major wallows. Above and below the meadows the stream bed is narrow and winding, contrasting with the straight, wide meadows area.

7) Cow Meadows. In the NW $\frac{1}{4}$ of Section 1, at the head of the hidden side drainage, a group of interconnected meadows, nineteen acres in total, are found. Seven cattle-worn, smooth-surfaced enclosures are connected by corridor-like meadows and trails blazed through the surrounding lodgepole stands. They feature aspen groves, snags, and some eighty foot subalpine firs. The enclosures are located in the bottom of a broad and shallow spatial definition with some aspen stands and talus on the slopes to the north, and some uneven-aged stands of mixed species lying to the south.

8) Exposed Bedrock. Although granitic outcrops occur throughout the drainage, two small side drainages in the eastern end of the study area are particularly rocky. Spherical, fractured outcrops and debris cover 182 acres of the side drainages. Some of the outcrops stand out, isolated from the slopes and trees. They are sixty to eighty feet long. Each is a minor feature in the landscape and attracts the viewer's line of sight. Some outcrops may provide a challenge to novice rock climbers and to the more experienced who enjoy scrambling the rocks for a good vantage.

9) Elk Creek Burn. At the head of the drainage and extending out of the study area, in all or portions of Sections 8, 9, 16, and 17, is the Elk Creek Burn. This large open area with many snags and much exposed bedrock is, in comparison to the rest of the thickly forested drainage, unique. It is an important scenic area because of its uniqueness and it is necessary habitat for some wildlife species. Moose frequent this area in the summer and may winter there. Elk spend much of the summer in and near the Burn. Raptors and other birds may be seen and bears use the area also. Regeneration is good. The fifteen year old lodgepole promise to change the appearance of this area in the not-too-distant future.

10) Engelmann Spruce-Subalpine Fir Stand. Adjacent to and contrasting with the Burn is a stand of sixty to eighty foot fir and spruce. The sixty three acre bench on which this stand occurs contrasts with the surrounding steep slopes. Under the sparse canopy of this stand is a moderately dense undergrowth and moderate to heavy deadfall. While access is better through this stand than most of the rest of the nearby stands, it is not good. Further down stream along the stream bed, the stand of mature fir and spruce continues but is occasionally interrupted by stands of young, dense lodgepole pine.

11) Douglas Fir Stand. In the NW $\frac{1}{4}$ of Section 13 along Wales Creek Road is a fifty two acre park-like stand of sixty to ninety foot Douglas fir. Sparse vegetation and a strong filtered light allow good visibility beneath the fifty foot high crown cover. The visibility is sometimes as great as 75 to 100 yards. Elk visit this area and the nearby open stands of mature lodgepole.

Some other important distinct settings are:

12) The scenic park-like stands of lodgepole, fir, and spruce along Chamberlain Mountain Fire Road. This area is important elk and mule deer habitat and also the most promising berry picking area of the drainage.

13) The extensive stand of mature lodgepole east of Wales Creek Road in Section 12. This is a gently to moderately sloped area with a feeling of spaciousness due to sparse ground vegetation and a high canopy of about thirty feet.

14) Small stands of mature lodgepole on the ridgetop in the SW $\frac{1}{4}$ of Section 12 along Wales Creek Road in Sections 14 and 15, and in the rocky side drainages of Section 1.

15) The approximate 100 acres of mature larch and Douglas fir situated on steep north facing slopes in hidden side drainage (N $\frac{1}{2}$ Section 1) in the vicinity of warm springs number two.

16) The fifteen acres of cottonwood trees in the bottom land of a rocky side drainage in the southern half of Section 1.

17) Each of the fifteen small and intermediate sized meadows, as well as those already mentioned, which are scattered throughout the drainage. Some have irregular surfaces, are dendritic and thick with alder, while others are smooth surfaced, grassy and elliptic.

HUMAN ADDITIONS

Access

Along the drainage ridges that make up the boundary of the study area, there are about ten miles of unimproved roads, (see overlay # 2), Wales Creek, Chamberlain Mountain Fire, and a portion of Chamberlain Creek Jeep Road, and a jeep trail that crosses the Burn just within the study area's west boundary. Wales Creek Road's west end junctions with this jeep trail and Elevation Mountain Road. (Elevation Mountain Road junctions with Keno and Kennedy Creek Roads which in turn meet Elk Creek Road. Elk Creek Road junctions with Sunset Hill Road seven and a half miles down stream. Sunset Hill Road junctions with State Highway 200.) Wales Creek Road follows the south ridge of the drainage. About one half the length is on the Wales Creek side of the ridge, and the other one half is on the Yourname Creek side. It meets the stream five and two tenths miles from Elevation Mountain Road in the northwest quarter of section twelve. Chamberlain Mountain Fire Road junctions with the East Fork of Chamberlain Creek Road in the middle of Section four and ends on the small plateau of Chamberlain Mountain, fifty yards from the rocky peak. The easternmost quarter mile of this road is a simple clearing through vegetation. On the north side of the Burn, the jeep trail junctions with Cap Wallace Gulch Road and the Chamberlain Creek Jeep Road. The jeep trail junctions with Wales Creek on the south side of the Burn. Except for short stretches along Wales Creek and Chamberlain Creek Jeep Road, all ten miles may be characterized as rugged.

The drainage as a whole is relatively inaccessible. Private property in the drainage's lower half prohibits approach from below. The unimproved roads which are employable only during the warmer half of the year, and then only by four-wheel drives, limit access from above. (Movement within the drainage is discussed further in the Recreation Experience Units Section on page..

There are almost six miles of four continuous main trails. Two trails depart from Wales Creek Road and descend into the drainage, both ending near the hot springs. A third trail goes up the hidden side drainage from a primitive road on the Wales Creek Ranch to the meadows at the head of the side drainage. The fourth trail, a pack trail, also starts from the Wales Ranch property and follows through the hot springs meadow along the stream bottom and from there to the beaver ponds. These trails, usually easy to follow, are generally free from overhanging branches and the footing is always good. Deadend side trails are numerous. There are between fifteen and twenty miles of these side trails. Some are continuous but most are fragmented. On some, the footing is excellent, but others traverse irregular meadow bottoms, rocks, and moderate deadfall. All of the main trails, and most of the side trails, are in the lower two thirds of the drainage. These trails, nearly all made by generations of cattle, usually follow gentle grades. The other trails made by wildlife are many times more steep and erosive.

Evidence of Human Use

During my stay in the drainage (June 27 - September 5), I observed one recreation visitor in a four wheel drive on the east fork of Chamberlain Creek Road. The other team members saw a total of two visiting parties in four wheel drives, also on the roads at the head of the drainage. No other use was observed during the summer. However, evidence of greater use exists in the drainage (see overlay # 2).

At four locations along Wales Creek Road there is evidence of hunter's camps. Their remains include cleared areas, stacked firewood, garbage pits, litter, and rails for stringing up game. The most developed hunter's camp includes a spur road, a small mobile cabin, a corral, a developed spring, and a garbage pit. The cabin is snug and adequately furnished. It is located in NE $\frac{1}{4}$ SE $\frac{1}{4}$ Section 16.

A wide trail of stumps, possibly a trial route for Wales Creek Road laid out by the Blackfoot Fire Protection Association, or possibly built by the state during one of Wales Creek's most recent fires, spurs off of Wales Creek Road in the southeast quarter of the southwest quarter of Section 12, and continues up the hill to the ridge top. From there it heads north by northeast and ends at the beginning of a steep north facing slope, four tenths of a mile from Wales Creek Road.

A prospector's dig was found in the southeast quarter of the southwest quarter of Section 11. The dig consisted of a narrow and shallow trench about 100 feet long across the top of a ridge. None other were found.

A camp with the remnants of a corral was found in the west end of a hot spring meadows (SE $\frac{1}{4}$ NE $\frac{1}{4}$, Sec. 11). What remains of the camp is a stove pipe hanging in a tree, and several other pieces of rusted metal.

The developed hot springs has not seen much human use in recent years. Miss Anita Wales of the Wales Ranch described the springs as "forgotten." In existence since the turn of the century, perhaps before, it is rumored that Garnet miners bathed in the hot springs. Members of the Wales family used these springs occasionally but have not for "many years." Initials (see figure 2) carved on a tree presently lying near the springs, most likely belong to members of that family, their guests, or employees. But, in conversation with Miss Wales and her sister, Mrs. Vera Wales Johnson, they said they could not identify for certain to whom the initials belonged. Other possible past users are packers and hunters who frequented the area in the early and mid 1900's.

Figure 2. Initials on Tree Near Hot Spring.

| |
|---------|
| LA |
| W |
| MW |
| VW |
| JULY 21 |
| RF |
| WH |
| 24 |

Recreation Experience Units

Recreation experience units (REU) are distinct entities within a land area. They are "...discrete portions of the forest land base to which people relate while engaging in forest outdoor recreation. They impart a sense of place upon visitors." REU's are logical planning and management units. In Western Montana, most REU's tend to correspond with small drainage basins. Their boundaries follow "major wall plane elements" such as ridgelines. In the Wales Creek Watershed, ridgelines delineate three distinct entities within the study area (Refer to Sight-seeing Quality Evaluation Scoresheet for a delineation of the REU boundaries.)

The first experience unit comprises most of the study area. It is separated from the other two units (both side drainages) by ridgelines extending from the eastern property line to the north and south walls of the drainage basin. The second REU is the last side drainage beginning with the top on the southside, and the third REU is the last drainage on the north side.

The Wales Creek unit is divided into three subunits. The subunits are different from the previously mentioned experience units in that they are visible to each other. The first subunit, (003), the lower portion of the Wales Creek REU, is comprised of two dry side drainages featuring an aspen-cottonwood grove, a stand of mature ponderosa pine, and extensive outcrops of bedrock. Grazing has helped to make this area the most accessible by reducing undergrowth and causing numerous trails.

The second subunit (005 and 006) in the upper one third, is characterized by dense vegetation with poor, sometimes impossible access. With the exception of several small meadows, this division is heavily forested. The vegetation of the burn and the north wall at 6000 feet and above, is less dense and access is possible and sometimes good.

The third subunit (004), Middle Wales Creek, is in everyway intermediate to the other two divisions. Access ranges from very good to poor. The vegetation is in some places extremely dense but this area also contains relatively large grassy meadows and park stands of mature lodgepole and Douglas fir with sparse undergrowth. In this section of the drainage, four special attractions occur: 1) Chamberlain Mountain, 2) The Beaver Ponds, 3) The Hot Springs, and 4) The Hot Spring Meadows.

Separated from the Wales Creek unit by a ridge running northeast to the east property line from the drainage's south wall is an REU, titled in this report, The Wales Creek Road Unit (001). The terrain in this unit is unique by Wales Creek standards. It is a gentle to moderate, smooth sloped side drainage. It features extensive park stands of mature lodgepole and some smaller stands of sixty to eighty foot Douglas fir, larch and ponderosa pine. Wales Creek Road passes through this unit.

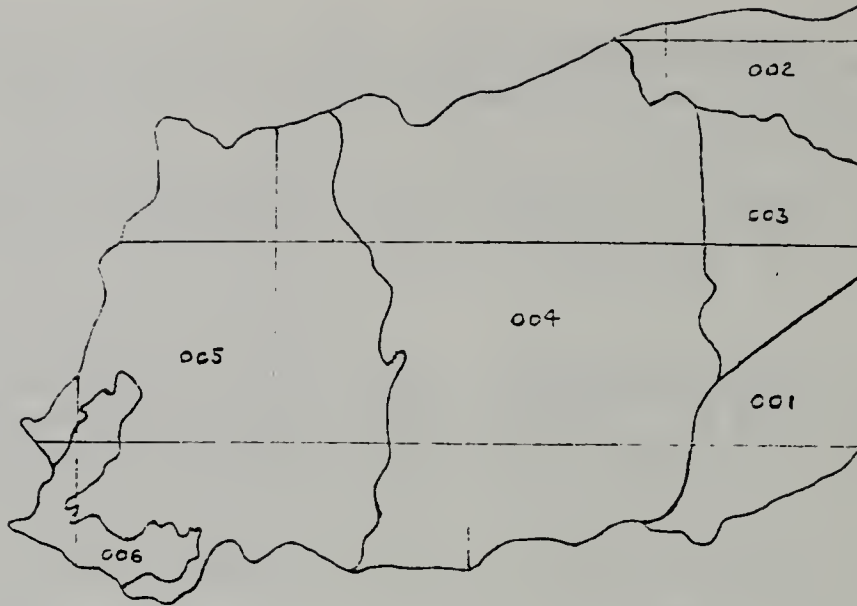
The Hidden Side Drainage REU (002) is the largest side drainage in the study area. It is separated from the Wales Creek REU by a two mile long ridge running southeast to the property line from the drainage's north wall. It features good trails, a warm springs, extensive meadows, talus slopes, and park stands of mature lodgepole, larch, Douglas fir and ponderosa pine. A road travels up this side drainage on the ranch below, and ends at the property line.

BLM RECREATION QUALITY EVALUATION

To coordinate the Wales Creek inventory with other BLM recreation inventories, the information gathered was translated into numbers and ratings according to the guidelines on the quality evaluation charts, and my personal knowledge and feelings. The charts and the evaluation scoresheets supplement the narrative and can be found on page 27a through 27u. The recreation activities rated are:

- 1) Sightseeing - scenery. The study area was divided into six rating areas based on like physiographic and vegetative characteristics. Two are REUs, three are the subunits of the Wales Creek REU, and the final area is that portion of the Elk Creek Burn that is in the drainage. Except for two rating areas, the Hidden Side drainage REU and the Burn, all of the areas fall into the intermediate class (B). The two exceptions have high scenic values because of the colorful vegetation in the Hidden Side drainage and the unique combination of vegetation and exposed bedrock in the Burn.
- 2) Sightseeing - geological. Five areas were rated for uniqueness, extent, form, representativeness, and color. Four of the areas were ranked high class (C) and low class (B), while the fifth area, the thermal area, was ranked in the high value class (A). Uniqueness was the deciding factor.
- 3) Sightseeing - zoological. The five areas rated for zoological sightseeing are the Burn, the beaver ponds, the hot spring meadows, the north-ridge wall, and the side meadows at the base of Chamberlain Mountain. The first two areas were given high recreation values because of the type, quantity, and variety of the wildlife (moose, elk, deer, bear, beaver, raptors, and songbirds). The remaining areas were rated high in the intermediate class (B).
- 4) Sightseeing - botanical. The entire drainage was rated according to the habitat types previously described. Habitats having the same value were grouped and the result was seven rating types. Approximately half of the drainage, three different habitats, is in the low class (C). Of the remaining half, 75% is rated Class "B". The Burn and the grassy meadows were rated high in the intermediate class (B). The habitats with the highest values (A) are larch, aspen and cottonwood because of their coloration.

- 5) Sightseeing - historical. The hot spring area was rated for it's scenic historical value. Documentation is brief, and accurate interpretation is impossible, and therefore the value of this only historic feature is low (C).
- 6) Fishing. The beaver ponds and the stream below the ponds were rated separately for fishing value. The moderate sized population of small fish caused both of the rating areas to fall into the low value class (C); the beaver ponds scored slightly better than the stream.
- 7) Off-road vehicle use. The drainage's unimproved roads were scored for all-terrain vehicle use. Other parts of the drainage are unsuitable for vehicle use. The roads, because of their limited extent, rate low (C). These roads, however, are of a much broader network and would score higher if considered as a part of a larger rating area.
- 8) Cross-country skiing. The main trails and the roads were rated for their potential for quality skiing experiences. The result was an intermediate score (B).
- 9) Primitive value. The factors considered in arriving at a primitive value are intrusions, scenic quality, wildlife, fisheries, water, size, and uniqueness. All of the factors except fisheries and water scored in the high intermediate range. The two exceptions scored low. The total score placed Wales Creek on the border between the high and intermediate classes (A & B).
- 10) Collecting - rocks and minerals. Low scores in two factors, desirability and quantity, placed Wales Creek in the low value class (C).
- 11) Collecting - vegetative. Wales Creek received intermediate scores with low quantities of desirable species holding the score down.
- 12) Hunting. Three factors, game, movement, opportunities, were considered in evaluating the potential for quality hunting experiences. Game and Opportunities received the highest possible scores. Movement received an intermediate score. The total score was in the high value class (A).
- 13) Sightseeing - other cultural. Nonhistorical man-associated features, such as water development projects, recent mines, fire roads, timber cuts, and the signs of grazing, are evaluated for recreation value. In Wales Creek, only fire roads and the impact of grazing are apparent. The factors considered when evaluating this potential activity are frequency in the region, extent in the study area, the feature's ability to arouse curiosity, and the amount of documentation on the feature available for interpretation. Each factor scored either low or intermediate. The total score fell within the low class (C).



| | | | | |
|------------------------|-----------|-------------------------------|---|-------|
| D. SLOUGH | | QUALITY EVALUATION SCORESHEET | A | 15-24 |
| 3. State | MONTANA | | | |
| 4. District | BUTTE | | | |
| 5. Plan Unit | BLACKFOOT | | | |
| 6. Recreation Activity | | | B | 10-14 |
| Sightseeing - Scenery | | | C | 1-9 |

| 8. KEY FACTORS | | 9. RATING AREA | | | | | | | 10. POINT MAXIMUM | | 11. TOTAL SCORE | | 12. CLASS | | 13. REMARKS |
|----------------|---------------------|----------------|-------|-------|------------|------------|------------|--|-------------------|--|-----------------|---|-----------|--|-------------|
| NO. (a) | NAME (b) | Land form | Color | Water | Vegetation | Uniqueness | Intrusions | | | | | | | | |
| | | 4 | 4 | 4 | 4 | 6 | 2 | | | | | | | | |
| 001 | Wales Road REU | 1 | 2 | 1 | 4 | 2 | 1 | | | | 11 | B | | | |
| 002 | Hidden Dings REU | 2 | 4 | 1 | 4 | 2 | 2 | | | | 15 | A | | | |
| 003 | Lower Wales Subunit | 2 | 2 | 1 | 2 | 2 | 2 | | | | 11 | B | | | |
| 004 | Mid. Wales Subunit | 2 | 2 | 2 | 2 | 2 | 2 | | | | 12 | B | | | |
| 005 | Upper Wales Subunit | 2 | 2 | 1 | 4 | 2 | 2 | | | | 13 | B | | | |
| 006 | Efk Creek Burn | 2 | 4 | 1 | 4 | 6 | 1 | | | | 18 | A | | | |
| | | | | | | | | | | | | | | | |

6111 - QUALITY EVALUATION OF RECREATION USE OPPORTUNITIES

Quality Evaluation Chart for Sightseeing - Scenery

EXPLANATION OF RATING CRITERIA

| Quality Evaluation Chart | | | |
|-----------------------------------|--|--|---|
| SCENERY | | | |
| KEY FACTORS | RATING CRITERIA AND SCORE | | |
| ① LAND FORM | Vertical or near vertical cliffs, spires, highly eroded formations, massive rock outcrops, severe surface variation. 4 | Steep canyon walls, mesas, interesting erosional patterns, variety in size & shape of land forms. 2 | Rolling hills, foothills, flat valley bottoms. 1 |
| ② COLOR | Rich color combinations, variety or vivid contrasts in the color of soil, rocks, vegetation or water. 4 | Some variety in colors and contrast of the soil, rocks & vegetation, but not dominant. 2 | Subtle color variations, little contrast, generally muted tones. Nothing really eye-catching. 1 |
| ③ WATER | Still, chance for reflections or cascading white water, a dominant factor in the landscape. 4 | Moving and in view or still but not dominant. 2 | Absent or present but seldom seen. 1 |
| ④ VEGETATION | A harmonious variation in form, texture, pattern, and type. 4 | Some variation in pattern and texture, but only one or two major types. 2 | Little or no variation, contrast lacking. 1 |
| ⑤ UNIQUENESS | One of a kind or very rare within region. 6 | Unusual but similar to others within the region. 2 | Interesting in its setting, but fairly common within the region. 1 |
| ⑥ INTRUSIONS | Free from aesthetically undesirable or discordant sights and influences. 2 | Scenic quality is somewhat depreciated by inharmonious intrusions but not so extensive that the scenic qualities are entirely negated. 1 | Intrusions are so extensive that scenic qualities are for the most part nullified. -4 |
| A = 15-24 B = 10-14 C = 1-9 | | | |

- ① Land Form or topography becomes more interesting as it gets steeper and more massive. Examples of outstanding land forms are found in Grand Canyon, the Sawtooth Mountain Range in Idaho, the Wrangle Mountain Range in Alaska, Rocky Mountain National Park, etc.
- ② Color. Consider the overall color of the basic components of the landscape (i.e., soil, rocks, vegetation, etc.) as they appear during the high use season. Key factors to consider in rating "color" are variety, contrast, and harmony.
- ③ Water is that ingredient which adds movement or serenity to a scene. The degree to which water dominates the scene is the primary consideration in selecting the rating score.
- ④ Vegetation. Give primary consideration to the variety of patterns, forms, and texture created by the vegetation.
- ⑤ Uniqueness. This factor provides an opportunity to give added importance to one or all of the scenic features that appear to be relatively unique within any one physiographic region. There may also be cases where a separate evaluation of each of the key factors does not give a true picture of the overall scenic quality of an area. Often it is a number of not so spectacular elements in the proper combination that produces the most pleasing scenery -- the uniqueness factor can be used to recognize this type of area and give it the added emphasis it needs.
- ⑥ Intrusions. Consider the impact of man-made improvements on the aesthetic quality. These intrusions can have a positive or negative aesthetic impact. Rate accordingly.

INSTRUCTIONS (See Sec. .1 for general procedures)

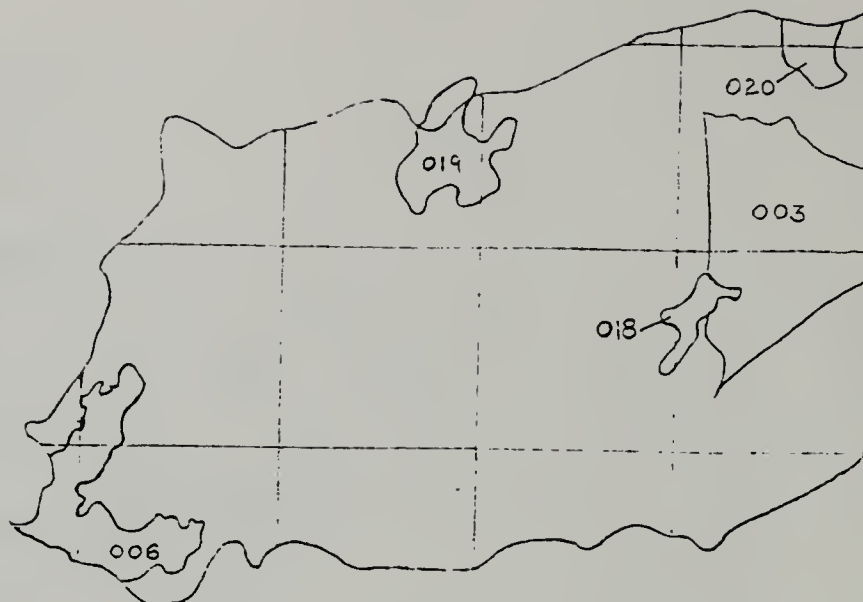
Purpose: To rate the aesthetic quality of the scenic resource on all BLM lands.

How to Identify Scenery Value: All Bureau lands have scenic value.

How to Determine Minimum Suitability: All BLM lands are rated for scenic values. Also rate adjacent or intermingling non-BLM lands.

How to Delineate Rating Areas: Consider the following factors when delineating rating areas:

1. Like physiographic characteristics (i.e., land form, vegetation, etc.)
2. Similar visual patterns, texture, color, variety, etc.
3. Areas which have a similar impact from intrusions (i.e., roads, structures, mining operations, or other surface disturbances).



| | | | |
|--------------|---|---|-------|
| 3. State | QUALITY EVALUATION SCORESHEET 6. Recreation Activity <i>Sightseeing - geological</i> | A | 16-20 |
| 4. District | | B | 11-15 |
| 5. Plan Unit | | C | 5-10 |

| 8. KEY FACTORS | | Frequency Excluded Storm Representative Color | | | | | | 11. TOTAL SCORE | 12. CLASS |
|----------------|----------------------|---|---|---|---|---|--|-----------------|-----------|
| 9. RATING AREA | | 10. POINT MAXIMUM | | | | | | 13. REMARKS | |
| NO. (a) | NAME (b) | 4 | 4 | 4 | 4 | 4 | | | |
| 003 | Lower Wales Subunit | 2 | 3 | 3 | 2 | 1 | | 11 | B |
| 006 | Elk Creek Burn | 2 | 3 | 2 | 2 | 1 | | 10 | C |
| 018 | Thermal Area | 4 | 3 | 3 | 3 | 3 | | 16 | A |
| 019 | Chamberlain Mtn. | 2 | 2 | 3 | 2 | 2 | | 11 | B |
| 020 | Hidden Side Drainage | 2 | 3 | 2 | 2 | 2 | | 11 | B |
| | | | | | | | | | |
| | | | | | | | | | |

6111 - QUALITY EVALUATION OF RECREATION USE OPPORTUNITIES

Quality Evaluation Chart for Sightseeing - Geological

EXPLANATION OF RATING CRITERIA

Quality Evaluation Chart
GEOLOGICAL

| KEY FACTORS | RATING CRITERIA AND SCORE | | | |
|------------------------------|--|------------------------------------|--|---------------------|
| ① FREQUENCY OF OCCURRENCE | ② Unique 4 | Rare 3 | Uncommon 2 | Common 1 |
| ③ EXTENT | Very large 4 | Large 3 | Medium 2 | Small 1 |
| ④ FORM | Dramatic, awe inspiring, startling, extreme 4 | Odd, unusual, strange, weird. 3 | Pleasant, interesting, pleasing, different. 2 | Common Average 1 |
| ⑤ REPRESENTATIVE TYPE | Excellent (typesite) 4 | Good 3 | Fair 2 | Poor 1 |
| ⑥ COLOR | Spectacular, bright, brilliant 4 | Colorful 3 | Some color 2 | Dull, drab 1 |

A = 20-16 B = 15-11 C = 10-5

- ① Frequency of Occurrence. The relative occurrence of the feature within the region.
- ② Unique. A feature may be unique to a region but still not have great visitor appeal. On the other hand, a feature may rate out low in one or more of the key factors but in combination it may be unique and have outstanding visitor appeal. The rater has the option to add whatever points in this area he feels are necessary to give a feature a valid rating. Any score beyond 4 must be explained in the remarks column of the Rating Score Sheet.
- ③ Extent. The area covered, the density, height, width, mass, or overall size.
- ④ Form. Rate according to the interest or the curiosity created by the form, shape or mass.
- ⑤ Representative Type. Deals with how well a feature illustrates the principle or example of geology it represents. The "type site" is rare and is the site where the feature or example was first identified and described.
- ⑥ Color. The key factors to consider in rating color are intensity, brilliance, variety, contrast, and harmony. Rate the feature as a whole; if only a small part has a splash of color, the rating would probably be low.

INSTRUCTIONS (See Sec. .1 for general procedures)

Purpose: To rate the quality of experience a sightseer can expect while viewing a given geologic feature.

How to Identify Geological Values: Consider all geologic features having human interest value. Following are examples of type geologic features which should be identified:

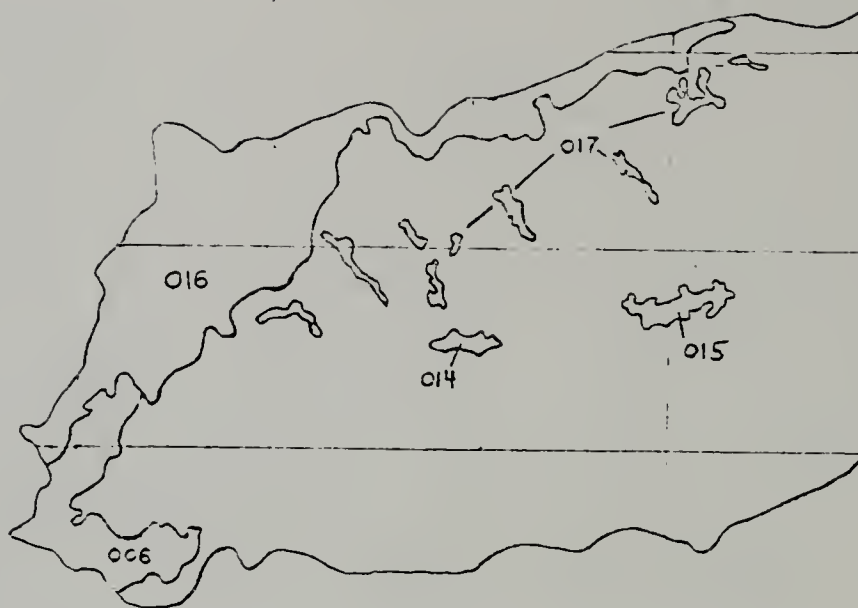
1. Erosional Features, including caves, natural bridges and arches, balanced rocks, dunes, rock sculpturing, deeply eroded canyons, gorges, etc.
2. Volcanic Features, including thermal features (hot springs, etc.) cones, lava flows, ice caves, gas tunnels, etc.
3. Glacial Features such as active glaciers, moraines, glacial acout, grooving or stria, boulder fields, drainage valleys, and drainage changes, etc.
4. Fossils such as petrified wood, dinosaur bones, footprints and trails, reptiles, fish, etc.
- Geologic Structures, such as faults, folds, dikes, sills,oliths, stocks, unconformities, etc.

6. Geologic Display Sites: Compact areas where significant periods of geologic history are represented or other important geologic processes are vividly portrayed.

How to Determine Minimum Suitability: Rate all sites significant enough to warrant some type of interpretation. Sites located on non-BLM lands may be rated if they form a logical management unit with sites or opportunities on adjacent Bureau lands.

How to Delineate Rating Areas: A rating area can be any size or shape from a point on an overlay (a natural arch) to a large area (a sand dune). If a feature is very large (several thousand acres) or the specimens are spread over a wide area, it may be desirable to rate the area as a whole but also select representative areas where the values are obviously higher for individual ratings.

Other Considerations: A geologic site need not be beautiful to be rated high. The primary factor rated is the degree of interest a feature creates. A feature could be interesting but very ugly. Only recreation sightseeing or public interest values are to be considered.



| | | | |
|--------------|---|---|-------|
| 3. State | QUALITY EVALUATION SCORESHEET 6. Recreation Activity <i>Sightseeing - zoological</i> | A | 20-24 |
| 4. District | | B | 15-19 |
| 5. Plan Unit | | C | 6-14 |

| 8. KEY FACTORS | | Frequency Quantity Priority Observation Type Variety | | | | | | | 11. TOTAL SCORE | | 12. CLASS | |
|----------------|--------------------|---|---|---|---|---|---|--|-----------------|----|-----------|-------------|
| 9. RATING AREA | | 10. POINT MAXIMUM | | | | | | | | | | |
| NO. (a) | NAME (b) | 4 | 4 | 4 | 4 | 4 | 4 | | | | | 13. REMARKS |
| 006 | Elk Creek Burn | 3 | 3 | 3 | 3 | 4 | 4 | | | 20 | A | |
| 014 | Beaver Ponds | 3 | 4 | 3 | 3 | 4 | 3 | | | 20 | A | |
| 015 | Hot Spring Meadows | 3 | 3 | 3 | 3 | 4 | 2 | | | 18 | B | |
| 016 | North Ridge Wall | 3 | 3 | 3 | 2 | 4 | 2 | | | 17 | B | |
| 017 | Side Meadows | 3 | 2 | 3 | 2 | 4 | 3 | | | 17 | B | |

6111 - QUALITY EVALUATION OF RECREATION USE OPPORTUNITIES

Quality Evaluation Chart for Sightseeing - Zoological

EXPLANATION OF RATING CRITERIA

| Quality Evaluation Chart ZOOLOGICAL | | | | |
|--|---|-------------------------------------|--------------------------------------|--------------------|
| KEY FACTORS | RATING CRITERIA AND SCORE | | | |
| ① *FREQUENCY OF OCCURRENCE | ② Unique 4+ | Rare 3 | Uncommon 2 | Common 1 |
| ③ *QUANTITY | Very high density 4 | High density 3 | Moderate density 2 | Low density 1 |
| ④ *CURIOSITY AROUSING | Very high very different unusual odd 4 | High strange different 3 | Moderate interesting attractive 2 | Low dull drab 1 |
| ⑤ EASE OF OBSERVATION | Excellent 4 | Good 3 | Fair 2 | Poor 1 |
| ⑥ TYPE | Large mammals 4 | Small Mammals birds or mixture 3 | Reptiles 2 | Other 1 |
| ⑦ VARIETY | 8 or more species 4 | 4-7 Species 3 | 2-3 Species 2 | One Species 1 |
| * Compared to other similar type features in the region. | | | | |
| A = 24-20 B = 19-15 C = 14- 6 | | | | |

- ① **Frequency of Occurrence.** The relative occurrence of the feature within the region.
- ② **Unique.** A feature may be unique in a region but still not have great visitor appeal. On the other hand, a feature may rate out low in one or more of the key factors but in combination it may be unique and have outstanding visitor appeal. The rater has the option to add whatever points in this area he feels are necessary to give a feature a valid rating. Any score beyond 4 must be explained in the remarks column of the Rating Score Sheet.
- ③ **Quantity.** Refers to the density and number of animals compared to other similar zoological sites in the region.
- ④ **Curiosity Arousing.** The degree of curiosity an animal or animal community creates in the mind of a visitor who sees it for the first time. Curiosity may be enhanced by anything that appeals to any of the five senses (i.e., sight, smell, feel, taste, and hearing).
- ⑤ **Ease of Observation.** Refers to the relative ease of viewing the animals. Do they stay under cover during the daylight hours? Do they congregate in one place during certain times of the day?
- ⑥ **Type of Species.** The type of species a visitor could expect to see at a given location during the visitor use season.
- ⑦ **Variety of Species.** The number of species a visitor could expect to see at a given location during the visitor use season.

INSTRUCTIONS (See Sec. .1 for general procedures)

Purpose: To rate the quality of experience a sightseer can expect while viewing a given zoological feature.

How to Identify Zoological Values: Consider all animals having special human interest value. Zoological values that should be considered include, but are not limited to, the following:

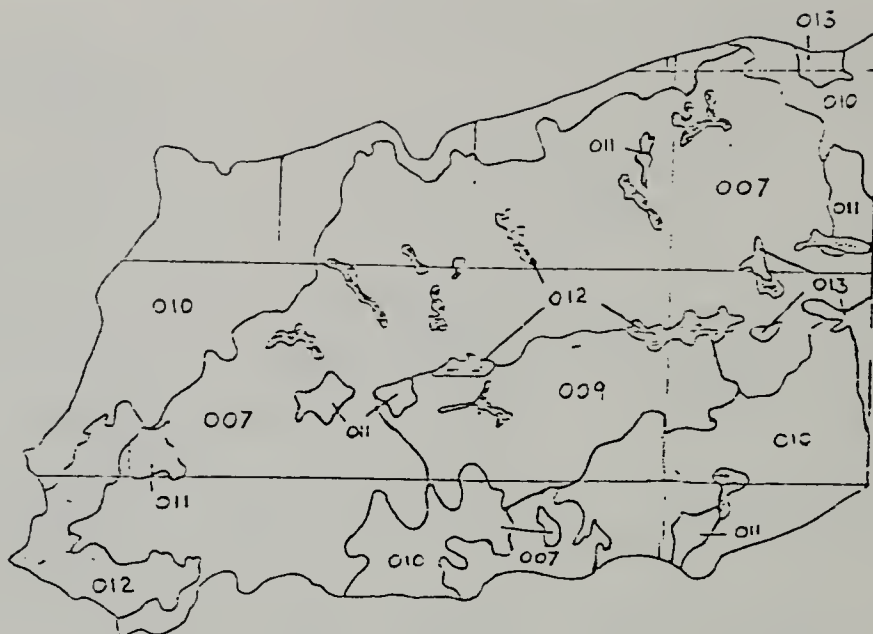
1. Areas where rare, unusual, or high interest animals can consistently be viewed.
2. Areas where it is technically possible to set up a management program for observing animals in their natural habitats.
3. Areas which seasonally have high concentrations of animal life.
4. Areas having an unusual mix of animal species.

How to Determine Minimum Suitability: A zoological site should have one or more of the following characteristics to qualify for rating:

1. Be a site recognized by professional groups or individuals as having special wildlife observation values.
2. Be a site where it is technically possible to set up a program for observing zoological features in their natural habitat.
3. Be a zoological feature creating a high interest level for most visitors.

How to Delineate Rating Areas: Delineate the prime observation areas and rate each area separately. A zoological rating area may be several hundred acres or less than an acre.

Other Considerations: The primary factor being rated is the degree of interest a zoological feature creates. Scientific values are considered only to the extent they contribute to the human interest values.



| 8. KEY FACTORS | | | | | | | | | | 11. TOTAL SCORE | | 12. CLASS | |
|----------------|--------------------------|----------------|---|---|---|--|--|--|--|-------------------|----|-------------|--|
| 9. RATING AREA | | | | | | | | | | 10. POINT MAXIMUM | | | |
| NO. (a) | NAME (b) | 4 ⁺ | 4 | 4 | 4 | | | | | | | 13. REMARKS | |
| 007 | Sedgepole 1 & 11 | 1 | 4 | 2 | 1 | | | | | | 8 | C | |
| 008 | Willow-Alder Mdw. | 1 | 3 | 2 | 3 | | | | | | 9 | C | |
| 009 | Mixed species | 2 | 2 | 3 | 3 | | | | | | 10 | B | |
| 010 | Mixed species wet | 2 | 3 | 3 | 3 | | | | | | 11 | B | |
| 011 | Spruce-fir, Doug. fir | 2 | 3 | 4 | 3 | | | | | | 12 | B | |
| 012 | Burn & Grass Mdw. | 3 | 2 | 4 | 4 | | | | | | 13 | B | |
| 013 | Larch, Aspen, Cottonwood | 3 | 3 | 4 | 4 | | | | | | 14 | A | |

6111 - QUALITY EVALUATION OF RECREATION USE OPPORTUNITIES

Quality Evaluation Chart for Sightseeing - Botanical

EXPLANATION OF RATING CRITERIA

Quality Evaluation Chart

BOTANICAL

| KEY FACTORS | RATING CRITERIA AND SCORE | | | |
|-------------------------------|--|----------------------------------|--|-----------------------------|
| ① *FREQUENCY OF OCCURRENCE | ② Unique 4+ | Rare 3 | Uncommon 2 | Common 1 |
| ③ *QUANTITY | Very high density 4 | High density 3 | Moderate density 2 | Low density 1 |
| ④ CURIOSITY AROUSING | Very high Very different, odd, unusual 4 | High Strange different 3 | Moderate Interesting, attractive 2 | Low Common, average 1 |
| ⑤ *COLOR | Flamboyant display 4 | Better than average display 3 | Average display 2 | Below average display 1 |

*Compared to other similar type features in the region.

A = 16-14 B = 13-10 C = 9-4

INSTRUCTIONS (See Sec. .1 for general procedures.)

Purpose: To rate the quality of the experience a sightseer can expect while viewing a given botanical feature or site.

How to Identify Botanical Values: Consider all plants or plant communities having special human interest values not adequately covered in the scenery evaluation. Botanical values that should be considered include, but are not limited to, the following:

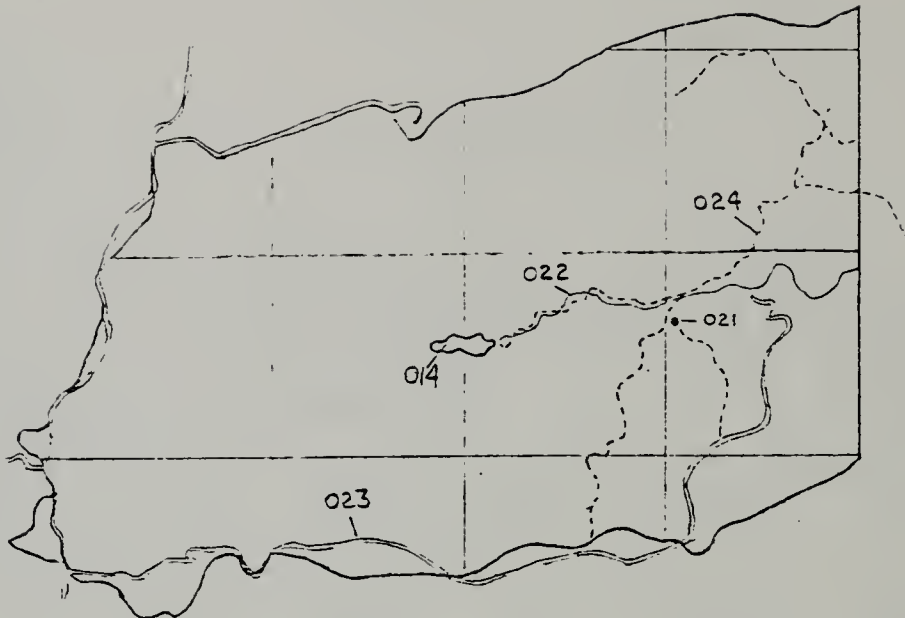
1. Areas consistently having significant seasonal displays of color such as spring flowering in the desert or alpine meadows and autumn leaf coloration.
2. Areas having rare or unusual plants or plant communities.
3. Plant or plant communities displaying exceptional vigor (i.e., the largest, the oldest, the healthiest, the most dense, etc.).
4. Areas having an unusual mix of plants (i.e., intermixing of plants from different life zones or from other geographic areas).
5. Scientific values are considered only to the extent they contribute to the human interest values.

How to Determine Minimum Suitability: Consider the following factors when deciding which botanical features should be rated:

1. Sites identified by botanists or other experts as having special botanical significance.
2. Botanical features easily recognizable as being different or unusual to the untrained eye.
3. Features having significant human interest appeal.

Note: When in doubt, rate.

How to Delineate Rating Areas: Any site meeting the minimum suitability criteria should be established as a rating area. A rating area could vary from a point where a single specimen is involved to a large area in the case of plant communities. Use natural breaking points in plant density as the primary criteria to delineating the rating area boundary.



| | | | |
|--------------|---|---|-------|
| 3. State | QUALITY EVALUATION SCORESHEET 6. Recreation Activity <i>Sightseeing - Historical</i> | A | 16-20 |
| 4. District | | B | 11-15 |
| 5. Plan Unit | | C | 5-10 |

| 8. KEY FACTORS | | Frequency Extent Preservation Type Authenticity | | | | | 11. TOTAL SCORE | | 12. CLASS | |
|----------------|-------------|---|---|---|---|---|-----------------|--|-------------|---|
| 9. RATING AREA | | 10. POINT MAXIMUM | | | | | | | | |
| NO. (a) | NAME (b) | 4 | 4 | 4 | 4 | 4 | | | 13. REMARKS | |
| 021 | Hot springs | 3 | 1 | 3 | 1 | 2 | | | 10 | C |

Quality Evaluation Chart for Sightseeing - Historical

EXPLANATION OF RATING CRITERIA

| Quality Evaluation Chart HISTORICAL | | | | |
|--|----------------------------|----------------------|-------------------------|---------------------------|
| KEY FACTORS | RATING CRITERIA AND SCORE | | | |
| ① FREQUENCY OF OCCURRENCE | ② Unique 4+ | Rare 3 | Uncommon 2 | Common 1 |
| ③ EXTENT | Very large 4 | Large 3 | Medium 2 | Small 1 |
| ④ PRESERVATION | Complete 4 | 3/4 Complete 3 | 1/2 Complete 2 | 1/4 Complete or less 1 |
| ⑤ REPRESENTATIVE TYPE | Excellent (Type site) 4 | Good 3 | Fair 2 | Poor 1 |
| ⑥ AUTHENTICITY | Fully documented 4 | Well documented 3 | Some documentation 2 | No documentation 1 |

A = 20-16 B = 15-11 C = 10-5

- ① Frequency of Occurrence. The relative occurrence of the feature within the region.
- ② Unique. A feature may be unique in a region but still not have great visitor appeal. On the other hand, a feature may rate out low in one or more of the key factors but in combination it may be unique and have outstanding visitor appeal. The rater has the option to add whatever points in this area he feels are necessary to give a feature a valid rating. Any score beyond 4 must be explained in the remarks column of the Rating Score Sheet.
- ③ Extent. The area covered, the density height, breadth, mass, or overall size.
- ④ Preservation. The amount of the original site or building which is left.
- ⑤ Representative Type. Deals with how well a site illustrates the phase or period in history it represents. A "type site" is rare and is where the phase or period was first identified and described or where the site is the most classic example of its kind.
- ⑥ Authenticity. The degree of documentation - is there enough known about the site to accurately interpret it to the public.

INSTRUCTIONS (See Sec. .1 for general procedures)

Purpose: To rate the quality of experience a sightseer can expect while viewing a given historic site.

How to Identify Historical Values: Consider any place or thing associated with a significant event, an important person, or a cultural activity of the past. Historic in most cases is 50 years old or older except for rare instances where exceptional events have taken place, such as the site of the first atomic bomb detonation.

How to Determine Minimum Suitability for Rating: Rate all historic sites. Sites located on adjacent non-BLM lands may be rated if they form a logical management unit with similar opportunities available on Bureau lands.

How to Delineate Rating Areas: An historic site rating area may be any of the following:

1. An individual feature such as a building.
2. A group of structures or features unified by past events such as a ranch headquarters, an early settlement, etc.
3. An historic district such as South Pass Historic Mining District in Wyoming which includes several ghost towns and all the mining operations, transportation network, military camp, etc. associated with this early mining venture.
4. An entire historic route or segment thereof.

Other Considerations: Consider only the recreation values of the site. Scientific values are considered only for the part they play in enhancing the human interest value.

3. State

QUALITY EVALUATION SCORESHEET

A

11-12

4. District

6. Recreation Activity

B

8-10

5. Plan Unit

Fishing

C

4-7

8. KEY FACTORS

Education
Contamination
Population
Propagation

11. TOTAL SCORE

12. CLASS

9. RATING AREA

10. POINT MAXIMUM

NO.
(a)NAME
(b)

13. REMARKS

014 Beaver Ponds 3 3 3 3 7 C

022 Stream below ponds 2 2 1 1 6 C

3. State

QUALITY EVALUATION SCORESHEET

A

21-24

4. District

6. Recreation Activity

B

16-20

5. Plan Unit

Off-road vehicle use

C

4-15

8. KEY FACTORS

Duration
Soil/Snow
Size
Restrictions

11. TOTAL SCORE

12. CLASS

9. RATING AREA

10. POINT MAXIMUM

NO.
(a)NAME
(b)

13. REMARKS

023 Bordering roads 4 4 1 2 11 C

3. State

QUALITY EVALUATION SCORESHEET

A

29-33

4. District

6. Recreation Activity

B

21-28

5. Plan Unit

Cross-Country Skiing

C

8-20

8. KEY FACTORS

Duration
Depth
Texture
Rise
Steepness
Temperature
Wind

11. TOTAL SCORE

12. CLASS

9. RATING AREA

10. POINT MAXIMUM

NO.
(a)NAME
(b)

13. REMARKS

023 024 Trails & Roads 4 4 4 4 3 2 3 24 B

27k

Quality Evaluation Chart - Fishing

EXPLANATION OF RATING CRITERIA

- ① Good. Stream or lake is stable. There is little drawdown or flooding during the use season.
- ② Fair. Not managed for optimum fishing conditions. The stream or lake is subject to flooding or drawdown, mostly during season of light use.
- ③ Poor. Subject to flooding or drawdown during heavy use season.
- ④ Uncontaminated. Free from harmful chemicals and bacteria. Objects are distinguishable 24" below the surface.
- ⑤ Contaminated. Contains a limited amount of undesirable chemicals or bacteria but not sufficient to affect the eatability of the fish. Objects can be recognized between 8-24" from surface.
- ⑥ Polluted... to the point where it is questionable if the fish are eatable. Objects are not distinguishable below 8".
- ⑦ Fish Population. The number and type of fish are both considered in this criteria. The higher quality type fish includes all trout species, bass, pike, and others as determined on a local basis. Lesser species include herring, catfish, bluegill, carp, sucker, others.
- ⑧ High. Supports a high population of one or more species of the better warm or cold water game fish, or a moderate population of an unusual sporting fish such as steelhead, or a moderate population of very large "trophy" fish. A "high population" is a relative factor that must be determined on the local level. The rater should identify an area which he considers high and use this as a base.
- ⑨ Moderate. Supports a moderate population of one or more of the better game species or a high population of less desirable species.
- ⑩ Low. Supports a low population of large fish or a large population of very small fish.

| Quality Evaluation Chart | | | |
|----------------------------------|-------------------------------|---|------------------------|
| FISHING | | | |
| KEY FACTOR | RATING CRITERIA AND SCORE | | |
| WATER FLUCTUATION | ① Good | ② Fair | ③ Poor |
| | 3 | 2 | 1 |
| CONTAMINATION | ④ Uncontaminated and clear | ⑤ Lightly contaminated or murky | ⑥ Polluted or muddy |
| | 3 | 2 | 1 |
| FISH POPULATION | ⑦ High | ⑧ Moderate | ⑨ Low |
| | 3 | 2 | 1 |
| PROPAGATION | Natural Propagation | Supplemented hatchery stocking required | Put and take operation |
| | 3 | 2 | 1 |
| A = 11-12 B = 8-10 C = 4-7 | | | |

INSTRUCTIONS (See Sec. .1 for general procedures)

Purpose: To rate the quality of experience a fisherman can expect while fishing in a given body of water.

How to Identify Fishing Values: Consider all water bodies having the capability of sustaining fish.

How to Determine Minimum Suitability: Rate all water bodies and stream segments having access from BLM lands except sterile bodies of water such as Great Salt Lake.

How to Delineate Rating Areas: Consider the following factors:

- a. Similarity of stream or lake conditions.
- b. Similarity of fish populations and species.
- c. Similarity of habitat. There may be portions of lakes or reservoirs where habitat conditions are dissimilar enough to be rated as a separate unit. For example, a shallow finger of a reservoir that has a large number of partially submerged stumps which make it ideal habitat could be delineated as a separate rating area.

6111 - QUALITY EVALUATION OF RECREATION USE OPPORTUNITIES

Quality Evaluation Chart for Specialized Equipment - Off-Road Vehicle Use

Quality Evaluation Chart

OFF-ROAD VEHICLE USE

| KEY FACTORS | RATING CRITERIA AND SCORE | | | |
|--|--|---|--|---|
| USEABLE TERRAIN FEATURES ① | Excellent variety (unique) ② | Good variety | Fair variety | Poor variety |
| | 8 | 6 | 4 | 2 |
| SOIL OR SNOW ③ *A - CYCLE ④ 6 4 WD | Preponderance of heavily consolidated soils. Minimum dust problem. | Preponderance of moderately consolidated soils or heavily consolidated soils w/tendency to powder up. | Preponderance of loosely consolidated soils - alluvial material, decomposed, granite, etc. | Preponderance of silt sand or soils with a severe dust problem. |
| *B - DUNE BUGGY (Sand) ⑤ | 80-100% of area active sand dunes ⑥ | 60-80% of area active sand dunes | 40-60% of area active sand dunes | Less than 40% of area active sand dunes |
| *C - SNOWMOBILE (Snow) ⑦ | + 4 months ⑧ | 3 - 4 months | 2 - 3 months | 1 - 2 months |
| | 8 | 6 | 4 | 2 |
| SIZE ⑧ | + 10,000 acres ⑨ | 5000-10000 acres | 1000-5000 acres | 500-1000 acres |
| | 4 | 3 | 2 | 1 |
| HAZARDS AND RESTRICTIONS ⑨ | | No major hazards or restrictions ⑩ | Some - but controllable | Several - but controllable |
| | | 3 | 2 | 1 |
| * Rate one only | | | | |
| A = 24-21 B = 20-16 C = 15-4 | | | | |

INSTRUCTIONS (see Sec. .1 for general procedures)

Purpose: To rate the quality of the experience an off-road vehicle operator could expect while operating the vehicle in a given area. The experience being measured is the thrill or satisfaction coming from operating the vehicle. The quality of other experiences that are by-products of using ORV's such as sightseeing, hunting, fishing, rockhounding, etc. are evaluated separately under other sections.

How to Identify Areas Valuable for Off-Road Recreation-Vehicle Use: All areas are considered valuable for ORV use except those where the surface character would preclude such use.

How to Determine Minimum Suitability for Rating:
All Bureau lands will be rated.

How to Delineate Rating Areas: Delineate areas having similar physiographic characteristics as separate rating areas. For example, areas having similar terrain, soil, and surface characteristics (i.e., vegetation, rock outcroppings, etc.) are grouped into separate rating units. It is permissible to use cultural features for boundaries such as highways, canals, urban, or agricultural areas, property lines, etc. if such boundaries form a logical management unit.

Note: This section does not provide the criteria for evaluating areas for ORV racing or other competitive events involving ORV's.

EXPLANATION OF RATING CRITERIA.

- ① Useable Terrain Features.** Includes all BLM lands except those where the surface character precludes ORV use such as solid boulder fields, dense vegetation, extreme marshy conditions, or slopes in excess of 60% grade. Consider the following characteristics of terrain features in completing this rating:
 - variety and challenge in the steepness and length of slopes.
 - Variety and challenge in surface character, i.e., hard, smooth, rocky, sandy, etc.
 - Variety and challenge in natural bowls, U-shaped valleys and ridges, etc.
 - Variety and challenge in potential jumps, hill climb opportunities, speed courses, etc.
- ② Unique.** If there is some particular feature unique to this location and highly desirable for ORV use, the option is left open to add whatever additional points the rater feels is necessary to give the area a valid rating. Any score beyond 8 points must be explained in the remarks column of the Rating Score Sheet.
- ③ Soil or Snow.** Use the set of criteria corresponding with the primary vehicle likely to use the area.
- ④ Cycle and 4 WD.** The ideal situation is a variety of soil types with the preponderance being heavily consolidated with a low dust factor.
- ⑤ Dune Buggy.** Includes all vehicles specially equipped to operate on sand including 4 wd vehicles.
- ⑥ Active Sand Dune.** A dune which is not vegetated and is exposed to, and is consistently changing as a result of wind conditions.
- ⑦ Snowmobile.** The number of months with a useable snow pack of 12" or more.
- ⑧ Size.** For purposes of this evaluation, the minimum manageable size of an ORV area is 500 acres. Anything smaller is not evaluated.
- ⑨ Hazards and Restrictions.** If there were no hazards, there would be no challenge; therefore, only those hazards likely to result in serious injury should be considered, such as:
 - sheer cliffs
 - quick sand
 - open mine shafts
 - flash flood
 - artillery dumps
 - conditions
 - poisonous plants and animals

6111 - QUALITY EVALUATION OF RECREATION USE OPPORTUNITIES

Quality Evaluation Chart for Winter Sports - Skiing

INSTRUCTIONS

Quality Evaluation Chart

SKIING

| KEY FACTORS | RATING CRITERIA AND SCORE | | | |
|----------------------------------|-------------------------------|------------------------------------|------------------------------|------------------------|
| ① LENGTH OF SEASON | 6 Months 6 | 5 Months 5 | 4 Months 4 | 3 Months 2 |
| ② SNOW DEPTH | + 4 feet 6 | 3-4 feet 4 | 2-3 feet 2 | 1-2 feet 1 |
| ③ SNOW TEXTURE* (dry snow) | 3/4 season 4 | 1/2 season 3 | 1/4 season 2 | Wet whole season 1 |
| VERTICAL RISE | 2500' + 6 | 1500-2500' 4 | 500-1500' 2 | 150-500' 1 |
| ④ STEEPNESS | ⑤ Excellent Variety 4 | ⑥ Good Variety 3 | ⑦ Fair Variety 2 | ⑧ Poor Variety 1 |
| ⑨ TEMPERATURES | Above 30° most of season 3 | Between 0°-20° most of season 2 | Below 0° most of season 1 | |
| ⑩ WIND | Slight 4 | Occasional 3 | Occasional high 2 | Frequent 1 |

*Disregard this factor when rating area west of Pacific Coast Crest.
For areas west of Pacific Crest use a score range of: A=25-29, B= 18-24 & C=7-17.

A = 29-33 B = 21-28 C = 8-20

- ① **Length of Season.** The number of months the average snow depth is 12 inches or greater.
- ② **Depth.** The average snow depth during the use season.
- ③ **Texture.** The period that snow is considered dry (cannot make a snowball).
- ④ **Steepness.** The most desirable slope is one with a variety of challenges. Consider the following as adequate:
 - a. Novice slopes - 10 to 20% grade (15-25% of area).
 - b. Intermediate slopes - 20 to 35% grade (25-40% of area).
 - c. Advanced slopes - 35 to 65% grade (30-40% of area)
- ⑤ **Excellent variety.** About half of usable slope is intermediate with adequate novice and advanced slopes.
- ⑥ **Good variety.** Most of usable slope is intermediate with adequate novice and some advanced slopes.
- ⑦ **Fair variety.** Most slopes are intermediate. Adequate novice slopes and no advanced slopes or the reverse (i.e. adequate advanced and no novice).
- ⑧ **Poor variety.** Most slopes are novice. Inadequate intermediate and no advanced, or the reverse (i.e., majority of slopes are advanced, etc.).
- ⑨ **Temperature.** Maximum daytime temperatures during the season of use in degrees Fahrenheit.
- ⑩ **Wind.** In selecting the rating level, consider the effect that wind has on personal comfort, snow quality, and surface quality.

- INSTRUCTIONS (See Sec. 1 for general procedures)

Purpose: To rate the quality of experience a skier can expect while skiing in a given area.

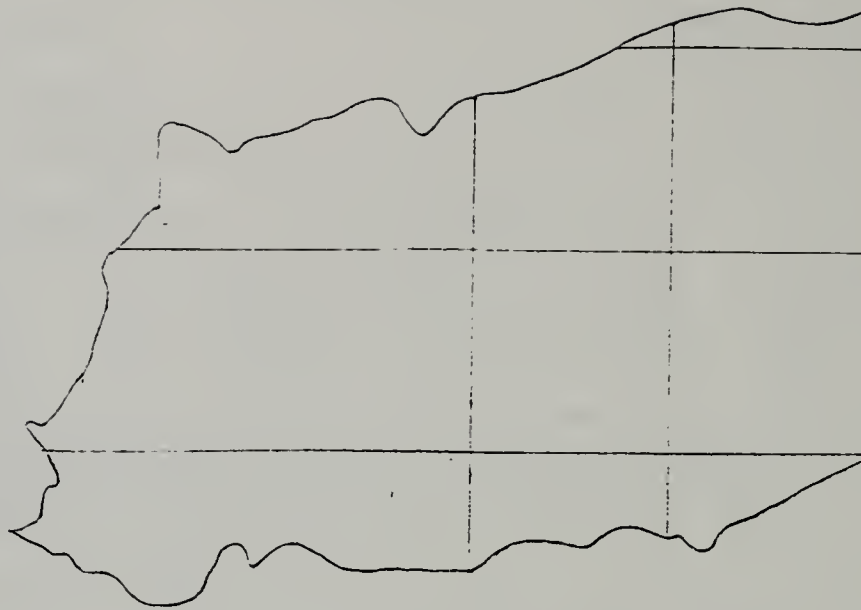
How to Identify Skiing Values: (See minimum suitability requirements below).

How to Determine Minimum Suitability: An area is considered suitable for evaluation if it meets the following minimum criteria:

1. The snow season (with 12 inches or more of snow) is greater than 3 months.
2. Most slopes are not southwest aspect.
3. Most slopes are between 25-40% grade.
4. Any one of the following conditions:

- a. The area has a vertical rise of 150-500 feet, and is within 1/2 hour driving time of a population center of 10,000 or more.
- b. The area has a vertical rise of 500-1,500 feet, and is within 1 1/2 hours driving time of a population of 50,000 or more.
- c. The area has a vertical rise of 1,500 to 2,500 feet, and is within 4 hours driving time of a population center of 50,000 or more.
- d. The area has a vertical rise of 2,500 or more.
5. A minimum of 5 acres is suitable for support facilities.
6. The exposure index is above a -30° most of the use season.

How to Delineate Rating Areas: Break the areas out by logical management units (i.e., provide adequate space in each rating area for complete economical unit including base areas, slopes, tow facilities, etc.).



025

| 3. State <i>Montana</i> | | QUALITY EVALUATION SCORESHEET | | | | | | | | A 20+ B 15-20 C 8-15 | |
|----------------------------------|-------------|---|---|---|---|---|---|----|----|----------------------------|-----------|
| 4. District <i>Butte</i> | | 6. Recreation Activity <i>Primitive Value</i> | | | | | | | | | |
| 5. Plan Unit <i>Blackfoot</i> | | | | | | | | | | | |
| 8. KEY FACTORS | | 10. POINT MAXIMUM <i>Antiquities</i> <i>Scenic Quality</i> <i>Wildlife</i> <i>Fisheries</i> <i>Water</i> <i>Size</i> <i>Vegetation</i> | | | | | | | | 11. TOTAL SCORE | 12. CLASS |
| 9. RATING AREA | | 10. POINT MAXIMUM | | | | | | | | 13. REMARKS | |
| NO. (a) | NAME (b) | 6 | 5 | 3 | 3 | 3 | 6 | 6+ | | | |
| 025 | Walls Creek | 4 | 3 | 3 | 1 | 1 | 4 | 4 | 20 | A | |
| | | | | | | | | | | | |

Quality Evaluation Chart for Primitive Values

EXPLANATION OF RATING CRITERIA

| Quality Evaluation Chart | | | |
|--------------------------|---|---|--|
| PRIMITIVE VALUES | | | |
| KEY FACTORS | RATING CRITERIA AND SCORE | | |
| ① INTRUSIONS | Pristine or nearly so. Evidence of man's activities are minimal. 6 | Some roads or other intrusions. But good potential for restoration. 4 | Limited capacity for restoration but still some potential. 2 |
| ② SCENIC QUALITY | Most of the area falls in the Class A. 5 | Most of the area is Class B or higher. 3 | Most of the area is Class C. 2 |
| ③ WILDLIFE | Large mammals present. Opportunities for viewing excellent. Generally 10 or more species. 3 | Large mammals present. Opportunities for viewing restricted. Generally less than 10 species present. 2 | Large mammals lacking or nearly so. 1 |
| ④ FISHERIES | Potential for high fisherman success. Generally 3 or more desirable species. A major attraction. 3 | Potential for moderate fisherman success. Mostly "B" class fishing opportunities. 2 | Little or no potential for fisherman success. Mostly Class C opportunities. 1 |
| ⑤ WATER USABILITY | Water bodies large enough to accommodate non-mechanized boating use and are a dominant attraction. 3 | Same - except not dominant attraction. 2 | Water bodies not large enough to accommodate boating. 1 |
| ⑥ SIZE | Greater than 50,000 acres or excellent opportunities for isolation. 6 | Between 5,000-50,000 acres or good opportunities for isolation. 4 | Area less than 5,000 acres. 1 |
| ⑦ * UNIQUENESS | Unique 6+ | Rare 4 | Common 1 |

*Compared to other similar type areas in the region.

A = 20 or more B = 15-20 C = 8-15

INSTRUCTIONS (See Sec. .1 for general procedures)

Purpose: To rate the quality of experience that a wilderness user can expect in the area.**How to Identify Primitive Value:** Consider the following characteristics in identifying primitive areas: (Also see 6221.)

1. Contains natural, wild, and undeveloped lands in a setting essentially removed from the effects of civilization.
2. Has outstanding opportunities for solitude or a primitive and unconfined type of recreation.
3. Is of sufficient size as to make practicable its preservation and use in an unimpaired condition.
4. May also contain ecological, geological, or other features of scientific, educational, scenic, or historical value.

How to Determine Minimum Suitability for Evaluation:

- A. Evaluate all roadless areas over 5,000 acres in size.

- B. Evaluate roadless areas smaller than 5,000 acres if they are bounded by natural barriers that provide a feeling of isolation and if they contain high quality wilderness features identified in the rating criteria.
- C. Evaluate large areas that have some impact from roads and other intrusions but contain other high quality wilderness features. should be evaluated.

How to Delineate Rating Areas: Use physiographic features such as large drainage basins, mountain ranges, etc. wherever possible. Place areas with similar characteristics into separate rating areas. For example, an area having no roads may form a rating unit providing all other factors are equal. Give emphasis to delineating large areas rather than small ones.

① **Intrusions.** This criteria measures the degree of impact man has had on the land and the potential for restoration to a natural condition.

② **Scenic Quality.** Use the rating identified in the Scenery Quality evaluation.

③ **Wildlife.** The variety of large mammals present in the area is used as an indicator of quality of experience. Following is a partial list of large mammals that should be considered in the evaluation:

| | |
|----------------|---------------|
| Antelope | Elk |
| Bear | Fisher |
| Beaver | Fox |
| Bobcat | Javelina |
| Big Horn Sheep | Lynx |
| Bison | Martlet |
| Burro | Moose |
| Caribou | Mountain Goat |
| Cougar | Musk Ox |
| Coyote | Wild Horses |
| Dall Sheep | Wolf |
| Deer | Wolverine |

④ **Fisheries.** The criteria is designed to measure the probable success a fisherman may expect in the area. Use the fishing quality evaluation as a basis for these ratings.

⑤ **Water Usability.** This criteria has reference to the usability of water as a form of transportation and as a source of interest and excitement, i.e., white water boating. Examples of dominate water attractions are:

- A rather extensive white water river system.
- A series of inter-connecting lakes that could be used for canoeing, etc.

⑥ **Size.** This criteria is designed to measure the degree of isolation a visitor could experience. The size and general character of the area are the two variables which are used to measure this.

⑦ **Uniqueness.** Use this factor to compensate for values not recognized in the other criteria. Is there something (not consider elsewhere) different or unusual about this area which would significantly add to the wilderness experience? The rater has the option to add whatever points he feels is necessary to give a feature a valid rating. Any score beyond 6 must be explained in the remarks column of the Quality Rating Score Sheet.

| | | | | | | | | | | | | |
|--|---------------------------------|---|---|---|---|--|--|--|--|----|---|-------------|
| 3. State | QUALITY EVALUATION SCORESHEET | | | | | | | | | | A | 18-22 |
| 4. District | 6. Recreation Activity | | | | | | | | | | B | 13-17 |
| 5. Plan Unit | Collecting - Rocks and Minerals | | | | | | | | | | C | 8-12 |
| 8. KEY FACTORS | | | | | | | | | | | | |
| <div style="display: flex; justify-content: space-between;"> <div>9. RATING AREA</div> <div>10. POINT MAXIMUM</div> <div>11. TOTAL SCORE</div> <div>12. CLASS</div> </div> | | | | | | | | | | | | |
| NO. (a) | NAME (b) | 4 | 6 | 6 | 6 | | | | | | | 13. REMARKS |
| 025 | Wales Creek | 3 | 2 | 2 | 4 | | | | | 11 | C | |

| | | | | | | | | | | | | |
|--|-------------------------------|---|---|---|---|--|--|--|--|----|---|-------------|
| 3. State | QUALITY EVALUATION SCORESHEET | | | | | | | | | | A | 18-22 |
| 4. District | 6. Recreation Activity | | | | | | | | | | B | 13-17 |
| 5. Plan Unit | Collecting - Vegetative | | | | | | | | | | C | 8-12 |
| 8. KEY FACTORS | | | | | | | | | | | | |
| <div style="display: flex; justify-content: space-between;"> <div>9. RATING AREA</div> <div>10. POINT MAXIMUM</div> <div>11. TOTAL SCORE</div> <div>12. CLASS</div> </div> | | | | | | | | | | | | |
| NO. (a) | NAME (b) | 4 | 6 | 6 | 6 | | | | | | | 13. REMARKS |
| 025 | Wales Creek | 3 | 3 | 3 | 4 | | | | | 13 | B | |

6111 - QUALITY EVALUATION OF RECREATION USE OPPORTUNITIES

Quality Evaluation Chart for Collecting

EXPLANATION OF RATING CRITERIA

- ① Desirability - refers to the quality of and the demand for the collectible specimen(s) found in the area. If the species is highly prized and in short supply, the rating would be "very high." On the other hand, if the quality of the collectible specimen(s) is average or lower and common throughout the region, it would receive a "low" rating.
- ② Quantity - as expressed in relative density over the entire area. If there are large variations in densities throughout the area, consider establishing separate rating areas for each density zone. Compare with areas which are recognized as high density areas.
- ③ Frequency of Occurrence - the relative occurrence of the feature within the region.

| Quality Evaluation Chart COLLECTING | | | | |
|--|---------------------------|-----------------|--------------|--------------------|
| KEY FACTORS | RATING CRITERIA AND SCORE | | | |
| SIZE | Over 2,000 Acres | 640-2,000 Acres | 10-640 Acres | Less than 10 Acres |
| | 4 | 3 | 2 | 1 |
| ① *DESIRABILITY | Very high | High | Moderate | Low |
| | 6 | 4 | 3 | 2 |
| ② *QUANTITY (density) | Very high | High | Moderate | Low |
| | 6 | 4 | 3 | 2 |
| ③ *FREQUENCY OF OCCURRENCE | Rare | Uncommon | Common | Prolific |
| | 6 | 4 | 3 | 3 |

*Compare with other similar type specimens within the region.

A = 18-22 B = 13-17 C = 8-12

INSTRUCTIONS (See Sec. .1 for general procedures)

Purpose: To rate the quality of experience that a collector can expect while collecting in a given area.

How to Identify Areas Valuable for Collecting: Consider all areas where there are collectible rock and mineral specimens such as rare and unusual mineral occurrences, geodes, agates, jasper, obsidian, beryl, ruby, sapphire, emerald, opal, chrysoberyl, jade, varieties of quartz, turquoise, garnet, zircon, topaz, malachite, azurite, and many others. Also consider areas where collectibles such as pine nuts or cones, etc. exist in collectible quantities.

How to Determine Minimum Suitability: Rate only hobby-type collectible resources. In most cases the rating will apply to rock collecting, but in some instances may refer to other collectibles such as plants, nuts, berries, and other legal items.

An area is considered suitable for rating if it has been identified as a collecting area in a publication of collecting groups, or by Bureau employees or professional groups, etc.

How to Delineate Rating Areas: Consider the following factors in delineating rating areas:

1. The relative density (quantity) of collectible items.
2. The surface exposure of geological formations or other collectible bearing feature.
3. Natural breaks such as fault lines, deeply eroded canyons, alluvial basins, breaks in vegetation, etc.
4. Cultural boundaries such as urban areas, agricultural areas, etc.

| | | | | |
|--------------|-------------------------------|--|---|-------|
| 3. State | QUALITY EVALUATION SCORESHEET | | A | 12-14 |
| 4. District | 6. Recreation Activity | | B | 9-11 |
| 5. Plan Unit | Hunting | | C | 4-8 |

| | | | | | | | | | | | | | |
|----------------|-------------|-----------------------------------|---|---|--|--|--|--|--|-----------------|----|-------------|--|
| 8. KEY FACTORS | | Game Movement Opportunities | | | | | | | | 11. TOTAL SCORE | | 12. CLASS | |
| 9. RATING AREA | | 10. POINT MAXIMUM | | | | | | | | | | 13. REMARKS | |
| NO. (a) | NAME (b) | 8 | 3 | 3 | | | | | | | | | |
| 025 | Wales Creek | 8 | 2 | 3 | | | | | | | 13 | A | |

| | | | | |
|--------------|-------------------------------|--|---|-------|
| 3. State | QUALITY EVALUATION SCORESHEET | | A | 13-16 |
| 4. District | 6. Recreation Activity | | B | 9-12 |
| 5. Plan Unit | Sightseeing - Other Cultural | | C | 4-8 |

| | | | | | | | | | | | | | |
|----------------|-------------|--|---|---|---|--|--|--|--|-----------------|---|-------------|--|
| 8. KEY FACTORS | | Frequency Extent Curiosity Authenticity | | | | | | | | 11. TOTAL SCORE | | 12. CLASS | |
| 9. RATING AREA | | 10. POINT MAXIMUM | | | | | | | | | | 13. REMARKS | |
| NO. (a) | NAME (b) | 4 | 4 | 4 | 4 | | | | | | | | |
| 025 | Wales Creek | 1 | 2 | 2 | 2 | | | | | | 7 | C | |

6111 - QUALITY EVALUATION OF RECREATION USE OPPORTUNITIES

Quality Evaluation Chart - Hunting

| Quality Evaluation Chart | | | |
|--|---------------------------|-----------------|-------------|
| HUNTING | | | |
| KEY FACTORS | RATING CRITERIA AND SCORE | | |
| ① GAME POPULATIONS | ② High 8 | ③ Moderate 4 | ④ Low 2 |
| ⑤ EASE OF MOVEMENT | ⑥ Excellent 3 | ⑦ Good 2 | ⑧ Poor 1 |
| ⑨ SHOOTING OPPORTUNITIES | Excellent 3 | Good 2 | Poor 1 |
| A = 12 - 14 B = 9 - 11 C = 4 - 8 | | | |

INSTRUCTIONS (See Sec. .1 for general procedures)

Purpose: To rate the quality of experience a hunter can expect while hunting in a given area.

How to Identify Hunting Values: Identify to the extent possible the relative density and location of game species (during the hunting season).

How to Determine Minimum Suitability: Complete evaluations only for areas where legal game species exist in huntable quantities. Legal game species are interpreted as those species for which State law allows hunting either with or without a license. Determining what represents huntable quantities must be done on an area-by-area basis. What represents huntable quantities in one part of the country would not necessarily apply in another.

How to Delineate Rating Areas: Consider the following factors in delineating rating areas:

1. Areas of high concentration of a single species or a grouping of species such as upland game, big game, water fowl, etc.
2. Natural breaks in habitat.
3. Natural features such as lakes, rivers, canyons, etc.
4. Manmade features such as highways, canals, etc.

EXPLANATION OF RATING CRITERIA

- ① **Game Population.** All game species within the rating area are rated as a composite. Use a two-step process as follows:

- First, determine the relative population (i.e., high, moderate or low) of each game species.

- Second, looking at all these species in composite, determine if the composite population is high, moderate, or low.

Population level, (high, moderate, low) is a relative factor which varies from region to region. Select an area which has a high population for the region and use this as a baseline for judging high, moderate, or low.

- ② **High.** Supports a high population of one or more of the better game species, or a moderate population of an unusual game species such as moose, big horn sheep, javelina, etc., or a moderate population of several (4 or more) common game species.

- ③ **Moderate.** Supports a moderate population of one or more of the better game species or a high population of less desirable species, i.e., rabbits, squirrels, etc.

- ④ **Low.** Supports a low population of one or more of the better game species or a moderate population of the less desirable species.

- ⑤ **Ease of Movement.** This criteria refers to the ease with which a hunter can move around within the area. Consider dense vegetation, marshy conditions, steep mountainous conditions, or other features that could create obstacles to hunter movement.

- ⑥ **Excellent.** Minimum restriction on hunter movement throughout the entire area.

- ⑦ **Good.** Minimum restriction to hunter movement over most of the area.

- ⑧ **Poor.** Serious restriction to hunter movement over most of the area.

- ⑨ **Shooting Opportunities.** This refers to the likelihood of a hunter getting a good shot(s) at the game once it has been flushed.

Quality Evaluation Chart
OTHER CULTURAL

| KEY FACTORS | RATING CRITERIA AND SCORE | | | |
|------------------------------|--|-----------------------------------|--|--|
| ① FREQUENCY OF OCCURRENCE | ② Unique 4+ | Rare 3 | Uncommon 2 | Common 1 |
| ③ EXTENT | Very Large 4 | Large 3 | Average 2 | Small 1 |
| ④ CURIOSITY AROUSING | Very high very different unusual odd 4 | High strange different 3 | Moderate Interesting puzzling attractive 2 | Low noticeable dull drab 1 |
| ⑤ AUTHENTICITY | Full documentation 4 | Well documented 3 | Some documentation 2 | No documenta- tion 1 |

A = 16-13 B = 12-9 C = 8-4

- ① Frequency of Occurrence. The relative occurrence of the feature within the region. For example, irrigation farming is common throughout the west but uranium mining occurs in only a few selected areas and open pit uranium mining is relatively rare; such a thing as a solution process uranium mine might be unique.
- ② Unique. A feature may be unique in a region but still not have great visitor appeal. On the other hand, a feature may rate out low in one or more of the key factors but in combination it may be unique and have outstanding visitor appeal. The rater has the option to add whatever points in this area he feels are necessary to give a feature a valid rating. Any score beyond 4 must be explained in the remarks column of the Rating Score Sheet.
- ③ Extent. The size as compared with other similar features in the region.
- ④ Curiosity Arousing. Curiosity may be enhanced by anything that appeals to the five senses (sight, smell, feel, taste, or hearing). The scoring will depend on the degree to which the feature arouses curiosity in the visitor.
- ⑤ Authenticity. The degree to which the feature has been documented. Is there enough known about the site to accurately interpret it to the public?

INSTRUCTIONS (See Sec. 1 for general procedures)

Purpose: To rate the quality of experience a sightseer can expect while viewing an "other cultural" type feature.

How to Identify "Other Cultural" Values: Consider any cultural feature less than 50 years old which has significant human interest value. For example:

1. Resource management projects such as chainings, timber cuts, contour furrowing, enclosures, etc.
2. Dams, canals, or other features associated with water diversion or storage projects.
3. Recent mining, milling, and associated operations.
4. Unique or unusual structures associated with recent events.
5. Sites where special events of wide public interest have occurred.
6. Any other man-made feature that creates significant curiosity or interest.
7. Rumor or legend which has general public acceptance but cannot be documented as having historical value.

How to Determine Minimum Suitability: Rate all sites significant enough to warrant some type of interpretation. Sites located on adjacent non-ELM lands may be rated if they form a logical management unit with opportunities on Bureau lands.

How to Delineate Rating Areas: The size and shape of "Other Cultural" sites will vary with the characteristics of the feature. A single structure would show up as a point on the overlay, whereas an example of clear cutting may encompass several acres. If the feature is very large in size (several thousand acres), it may be desirable to select one or more smaller areas for rating purposes which best exhibit the human interest values.

Other Considerations: Include private operations occurring on ELM lands through leasing or special land use permits, etc., such as oil exploration, mining, logging, etc.

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tion of Wales Creek,
Northern Garnets.
rpled mountains
smooth sloped mountain
d Elk Creek's north
bedrock underlying
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nd it is this terrain
que characteristics of
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fire, Wales Creek is
stands separated by
larch, subalpine
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reek (see overlay, #3).

e Wales Creek an
significant recreation
uch as beaver, coyote,
s well as those already
probably due in part
Wales Creek. Another

It is one of the
Range. Aside from
ed is unroaded, yet
ary trail system

created by a history of cattle grazing is capable of dispersing hikers
throughout the eastern two thirds of the drainage. Most of the main
trails are capable of sustaining parties on horseback.

| | |
|---------------------------------|---|
| Qual | |
| KEY FACTORS | |
| ① FREQUENCY OF OCCURRENCE | ② Unique |
| ③ EXTENT | Very Large |
| ④ CURIOSITY AROUSING | Very high very different unusual odd |
| ⑤ AUTHENTICITY | Full documentation |

A - 16

INSTRUCTIONS (See 5)

Purpose: To rate the quality of experience while viewing an "other cultural" type feature.

How to identify "Other Cultural" Values: Feature less than 50 years old which has value. For example:

1. Resource management projects such as contour furrowing, exclosures, etc.
2. Dams, canals, or other features essential or storage projects.
3. Recent mining, milling, and associated structures.
4. Unique or unusual structures associated with special events of wide occurrence.
5. Sites where special events of wide occurrence.
6. Any other man-made feature that creates significant curiosity or interest.
7. Rumor or legend which has general public acceptance but cannot be documented as having historical value.

Other Considerations: Include private operations occurring on BLM lands through leasing or special land use permits, etc., such as oil exploration, mining, logging, etc.

Rel. 6-31
8/4/72

BLM MANUAL

WICHE would appreciate your comments. After having read this intern report, please complete the following form and drop the card in a mailbox. Thank you.

1) Title of Report _____

2) How did you obtain this report? _____

3) Why did you read the report? _____

4) What is your evaluation of the report? _____

5) Do you have any other comments? _____

Please Print Name _____

Position _____

Organization _____

Address _____

City, State, Zip _____

CONCLUSION

INVENTORY SUMMARY

From atop Elevation Mountain looking in the direction of Wales Creek, one is able to discern a topography unique to the Northern Garnets. There, a two mile wide, 12.5 mile long path of rumpled mountains stands out in contrast to the surrounding steep, smooth sloped mountain ridges. The undulating terrain of Wales Creek and Elk Creek's north fork is an indirect product of the grano-diorite bedrock underlying these two drainages. The erosive quality of the soils formed from this rock is the direct cause of this rough terrain, and it is this terrain that is the most noticeable of the four major unique characteristics of Wales Creek. The second most apparent characteristic of Wales Creek is the diverse vegetation. Greatly influenced by fire, Wales Creek is a patchwork of age and density variant lodgepole stands separated by small to moderately sized stands of Douglas fir, larch, subalpine fir, Engelmann spruce, and ponderosa pine. A third major Wales Creek characteristic is its healthy population of moose. Twenty four different moose were sighted during the study of the 6100 acre drainage. Moose are highly dependent on quality habitat, a habitat that includes boggy areas, good cover, and good quantities of browse plants. Wales Creek does well in all three, perhaps a tribute in part to its history of fire. (For more detailed information, see the wildlife portion of the Wales Creek Interdisciplinary Project by Keith Boggs.)

The final distinction making Wales Creek drainage unique among similarly located mountain watersheds is, as the first distinction, geologically rooted. The sandy and gravelly soil formed from the granitic bedrock allows rapid percolation of surface water. The fractured bedrock allows greater penetrance and acts as a reservoir storing large quantities of water. The surface water now in storage in the bedrock underlying Wales Creek is heated by that very rock and then released in several locations throughout the drainage. One hot springs, six warm springs, and at least that many warm water seeps occur in Wales Creek (see overlay, #3).

Large elk, deer, bear, and grouse populations make Wales Creek an important wildlife haven and add to it's already significant recreation value. The existence of other wildlife species such as beaver, coyote, hawks, ducks, songbirds, marmots, and squirrels as well as those already mentioned, indicate excellent ecological health, probably due in part to the variety of forest habitats represented in Wales Creek. Another important quality is the drainage's primitiveness. It is one of the last undeveloped drainages in the Garnet Mountain Range. Aside from the unimproved roads on the ridgetops, the watershed is unroaded, yet foot access into the drainage is good. A rudimentary trail system created by a history of cattle grazing is capable of dispersing hikers throughout the eastern two thirds of the drainage. Most of the main trails are capable of sustaining parties on horseback.

Presently, the main recreation activity in the drainage is hunting. The entire drainage offers a good opportunity for successful hunting and certain readily accessible big game habitats offer excellent opportunities. Other pursuits associated with hunting -- sightseeing, camping -- are also recommended secondary and multiple uses.

Fishing in the drainage is poor compared to that in most Western Montana watersheds. Wales Creek's best location for fishing, the beaver ponds, will not suit most sport fishermen, but only those campers who wish to subsist off the land. The opportunity for collecting wild edible foods is generally good in Wales Creek, with certain locations being especially good: 1) The northwest ridgetop and southeast facing wall for huckleberries and grouse whortleberries, 2) The stream bottoms in the drainage's west end for hawthorn, and 3) The dry sandy slopes in the northeast quarter of the study area, as well as the Burn, for strawberries. Among the other edible plants found in lesser abundance throughout the drainage are raspberries and serviceberries.

Rockhounds who search hard enough will find garnets in this drainage, and a brief search will turn up many pieces of clear and white quartz. Among the other minerals present in the granitic bedrock, only hornblende may be found in sizable pieces.

For backpackers, trails lead to numerous good camping locations. The dry open areas in the vicinity of the beaver ponds, the hot spring meadows, and the meadows at the head of the hidden side drainage, are three likely heavy use areas, should backpacking use increase. The present system of access allows hikers to drive within two miles of these three main destinations, not enough distance for most backpackers whose goal is, in part, to get away from conventional routes of travel. If the several primitive roads along the ridges of the drainage were closed and allowed to deteriorate into trails, and the private property continued to restrict access from below, the hiking distances to these areas would double, putting the destinations in a range suitable for weekend backpackers. Increasing the trail distance to these destinations and to other parts of the drainage would also cause an increase in fall pack trips by hunters.

Access is from the top rather than from the bottom which prohibits use of the drainage by all skiers but the ardent who plan on spending at least one night in the drainage. In the future, if the present upward trend in winter camping continues, and with the added attraction of the hot springs as a lure, skiing trips could prove to be one of the most popular uses of the drainage.

In the summer, driving the roads at the drainage's west end is the recreation activity that occurs most. In the winter, snowmobiling use occurs along these west end roads but large snow drifts to the south along Elevation Mountain Road prohibits the arrival of most potential users. Picnicking and other socially oriented uses do not occur in the drainage or along its borders, and should not as long as the roads remain unimproved.

Recommended Alternative

The information compiled was considered and a range of management alternatives suitable for the future of Wales Creek was developed (as a defacto Wilderness area, the option value and the range of recreation opportunities is at its maximum):

- 1) Designated Wilderness.
- 2) Backcountry, an administratively designated primitive area.
- 3) A natural recreation area with easy access.
- 4) A multiple use area including logging, grazing, and recreation with easy access.

Based on the data in this report, the most suitable alternative is to administratively designate and manage Wales Creek as a primitive area. The following recommendations are made on the assumption that this alternative will be recognized as the correct alternative. The provisional recommendations are made on the assumption that either alternative three or alternative four is chosen for management.

MANAGEMENT PRESCRIPTION

Recommendations

- 1) Classify and manage the entire drainage as a Primitive Area, walk-in backcountry, and study for wilderness, (see recommendation 8).
- 2) To minimize impact on the land and vegetation, improve the trail system. a) Remove low hanging branches on existing routes. b) Re-route the major trails so they avoid wet areas, and steep erosion prone slopes, so they pass an occasional vantage point and head more directly toward destinations. This would require some site planning for minor adjustments to, and several extensions of, existing trails. c) Close off undesirable side trails, for example those traversing fragile wet areas. d) Number and indicate trail heads with signs. To decentralize use and allow visitors to rediscover features, do not use descriptive names such as "Hot Spring Trail".
- 3) In order to preserve the integrity of Wales Creek as a primitive area, close off motorized access. a) Close the burn jeep trail to all vehicles by posting and blockading. b) Close Chamberlain Mountain Fire and Wales Creek Roads to visitor vehicle use by posting and blockading. Consider closing to all vehicle use.
- 4) Establish a designated campground accessible to vehicles along Chamberlain Creek Jeep Road in one of the following locations: SE $\frac{1}{4}$ of Section 8 or N $\frac{1}{2}$ of SE $\frac{1}{4}$ of Section 4. (This requires moving the road closure boundary to a line west of or corresponding with the Chamberlain Creek Jeep Road. The next best alternative is a location outside of the study area in the vicinity of the junction of Elevation Mountain Road with Kennedy Creek Road.)

5) Monitor recreation use: a) In the fall to accurately determine hunter use, and, b) Throughout the year, indefinitely, for a change in the pattern of use with a particular emphasis on the hot spring area.

6) Because Wales Creek's big game populations are a major source of recreation value, determine the impact of grazing on wildlife in the Hidden Side drainage. Consider completing fence along the northeast property line.

7) Make every effort to preserve the integrity of the recreation experience units. Prohibit incongruent uses.

8) Wales Creek is an unroaded, undeveloped drainage of 6100 acres. With the exception of 520 acres owned by the State of Montana, it is Federally owned. The four criteria for Wilderness outlined in the Wilderness Preservation Act of 1964 are: 1) That the area be Federally owned, 2) That it be 5000 acres or greater, 3) That it be unroaded, and 4) That it be undeveloped. Wales Creek meets all of the criteria named and therefore should be studied for inclusion into the Wilderness System.

Provisional Recommendations

1) Given increased use/impact occurs, because of easier access or greater awareness of Wales Creek: a) Establish designated vehicle campgrounds in one or more of the several recommended locations listed below as need dictates. b) Establish designated pack-in campsites in one or more of the several locations listed below as need dictates. c) Expand the improved, re-routed trail system to disperse use and connect more directly important attractive features. d) Close impacted areas and monitor recovery.

2) Given grazing has an adverse impact on wildlife and then on recreation: a) Allow only restricted grazing or none at all. b) Construct a fence across the hidden side drainage from its present end to the northeast corner of section 1.

Potential Campsites

These areas are recommended for consideration as designated campsites:

A. Pack-in

1) Hot Spring Area:

(S $\frac{1}{2}$ SW $\frac{1}{4}$, NW $\frac{1}{4}$ Sec. 12) Flat, close to water, within one eighth of a mile of the hot spring, this is a dry site capable of supporting small camping groups with minimal impact. The major potential conflict is with the wildlife that frequent the area. It is above the hot spring, in the side drainage bottom and amid mature Douglas fir and larch.

2) Beaver Pond Area:

This site is in the side drainage south of Wales Creek, below the ponds, (N $\frac{1}{2}$ SW $\frac{1}{4}$ Sec. 11). A flat, dry scenic open area, it is within a quarter mile of the beaver ponds.

3) Hidden Side Drainage:

Along the stream bed, one eighth of a mile west of the property line, beneath a canopy of mature Douglas fir and larch, dry and flat and close to the warm spring, this area is also close to several trails leading further into the drainage. The major potential conflict, again, is with wildlife.

B. Car Camps

1) Wales Creek Road:

Among a stand of mature Douglas firs, on the side of the road as it passes from Yourname to Wales Creek (S $\frac{1}{2}$ NE $\frac{1}{2}$ Sec. 12), is a scenic area, flat to gently sloped. Campers here may conflict with the wildlife that frequent the area.

2) Hidden Gulch:

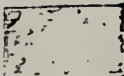
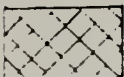


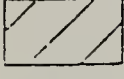



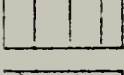
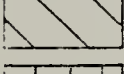
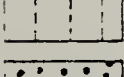

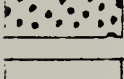
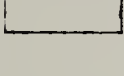
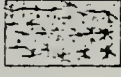






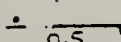




Upstream from Wales ranch property, a quarter of a mile on the north side (N $\frac{1}{2}$ SE $\frac{1}{4}$, NE $\frac{1}{4}$ Sec. 1), is a flat to gently sloped dry gulch. Heavy cattle use has caused this area to be one of the most disturbed in the drainage. It is close to the warm spring and to trails going further into the drainage. A campground here would require obtaining a right-of-way across the Wales Ranch as well as the building of a quarter mile of road.


3) Chamberlain Mountain:

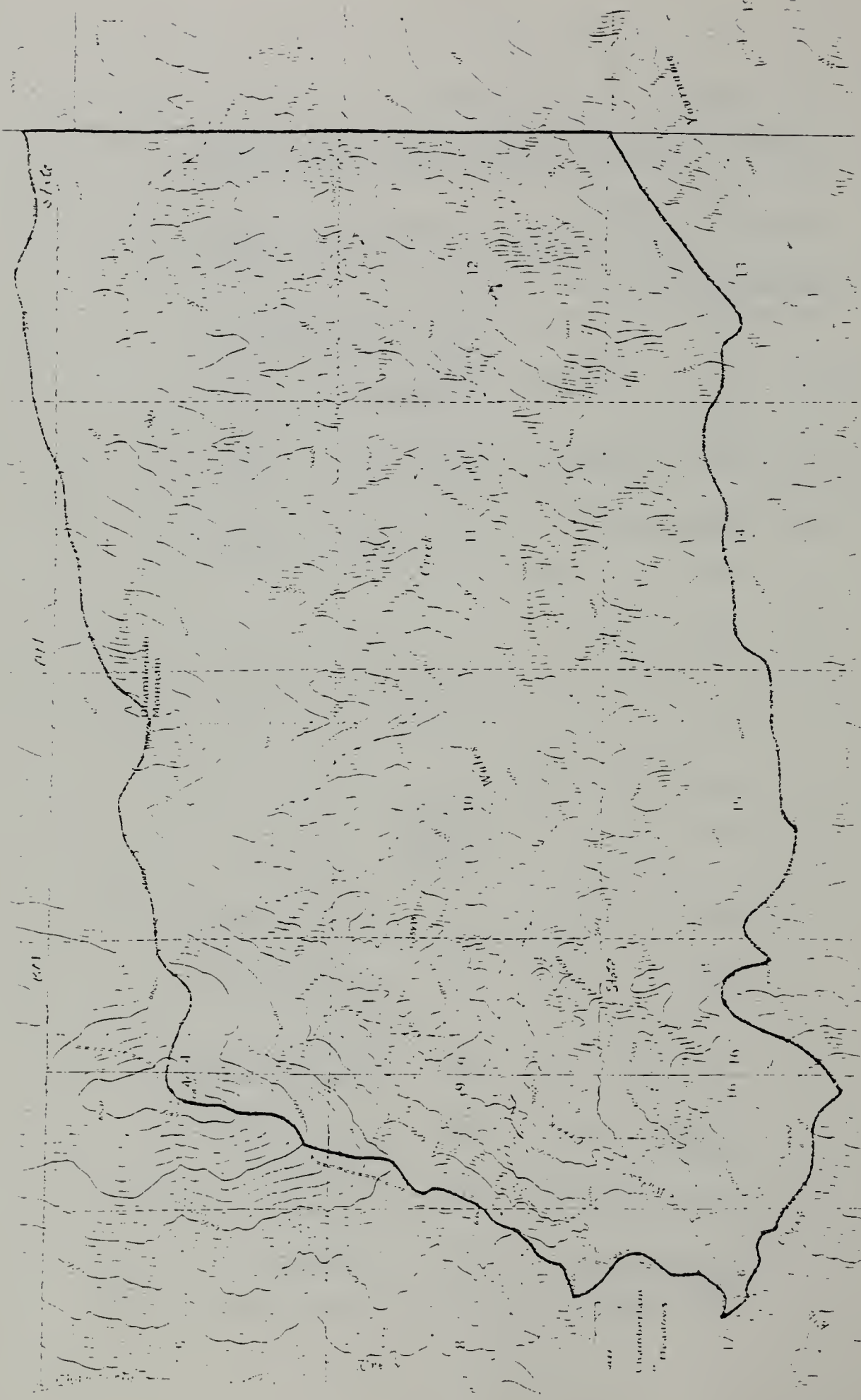
Along Chamberlain Mountain Fire Road, where it crosses the line between Section 3 and 4, is a scenic flat area featuring park-like stands of mature lodgepole, the best berry picking in the drainage, and a close proximity to Chamberlain Mountain. However, this area is heavily used elk habitat.

1. Montana State Engineers Office, 1959, Water Resources Survey - Powell County, Montana, State Engineers Office, Helena, Montana, pps. 15, 16.
2. Bureau of Land Management, 1971, Blackfoot Unit Resource Analysis, Missoula Office of Butte District.
3. Litton, R. Burton Jr., 1968, "Forest Landscape Description and Inventories - a basis for land planning and design." USFS Research Paper PSW-49, 64 pp.
4. Crowley, John, Topographic Description, Geography Department, University of Montana, 1 pp.
5. Bureau of Land Management, 1972, Manual, Outdoor Recreation Section, paragraphs 6110.01, 6110.02.
6. Bureau of Land Management, 1972, Manual, Outdoor Recreation Section, paragraph 6111.15.

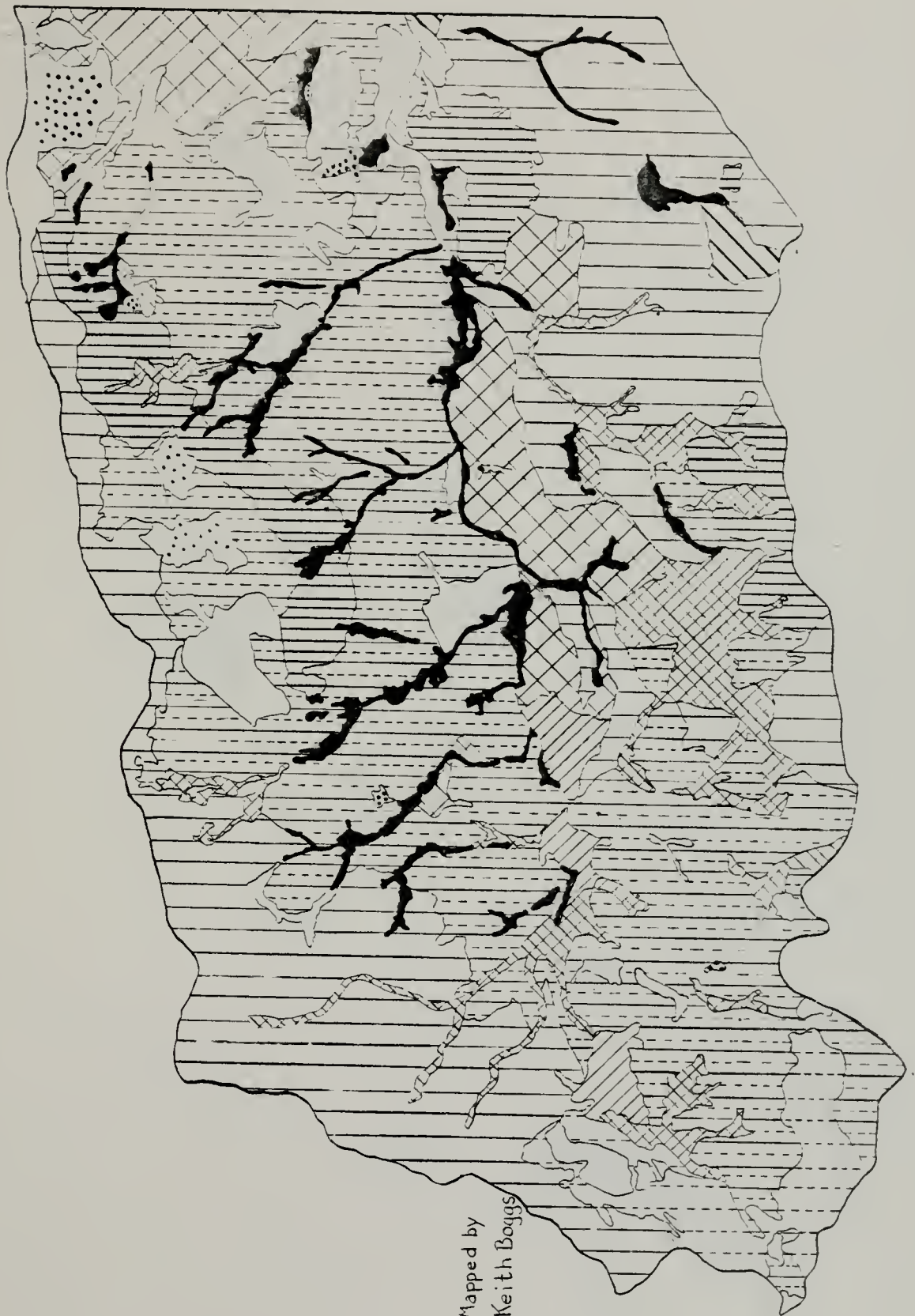
L E G E N D

| | | | | |
|---|----|-------------------------|---|---------------------------------|
|  | 1 | Grass and Alder Meadows | | |
|  | 2 | Mixed Species - Wet | | |
|  | 3 | Mixed Species | | |
|  | 4 | Spruce - Fir | | |
|  | 5 | Larch | | |
|  | 6 | Douglas Fir | | |
|  | 7 | Dense Lodgepole | | |
|  | 8 | Lodgepole | | |
|  | 9 | Park-like Lodgepole | | |
|  | 10 | Ponderosa Pine | | |
|  | 11 | Burn |  | |
|  | 12 | Aspen - Cottonwood | | |
|  | 13 | Rock |  | |
|  | | Unimproved Road |  | Thermal Spring |
|  | | Trails |  | Developed Hot Spring |
|  | | Stump Trail |  | Present Nondesig-nated campsite |
|  | | Mileage between periods |  | Historic campsite with corral |
|  | | Prospector's Dig |  | REU and REU subunit boundry |
|  | | Potential Camp-site | (10) | Attraction |





Overlay I Habitat



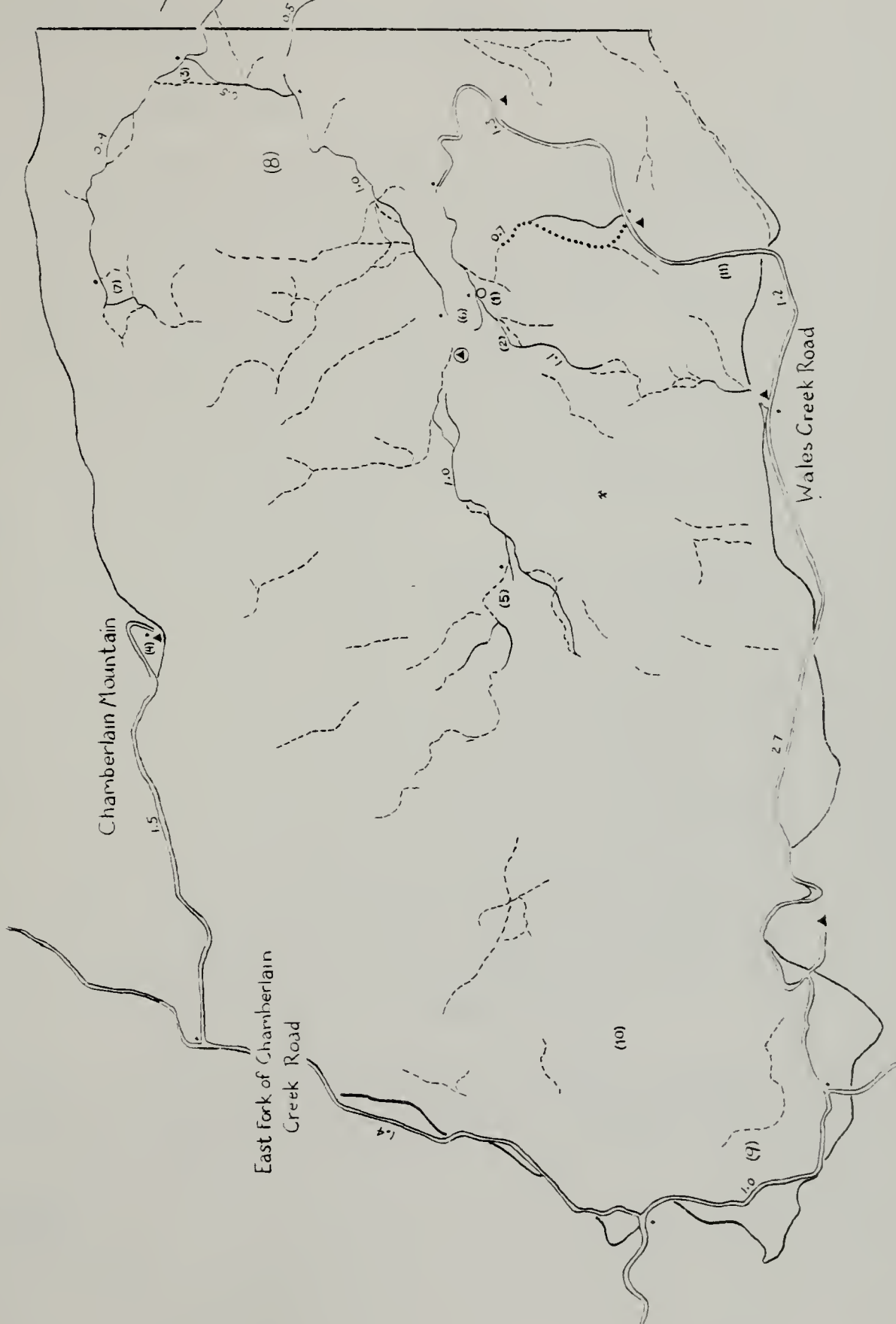
Overlay III

• Summary



Overlay II

• Access



This intern report was read and accepted by a staff member at:

Agency: Bureau of Land Management Garnet Resource Area

Address: P.O. Box 4427
Missoula, Montana 59806

This report was completed by a WICHE intern. This intern's project was part of the Resources Development Internship Program administered by the Western Interstate Commission for Higher Education (WICHE).

The purpose of the internship program is to bring organizations involved in community and economic development, environmental problems and their students in the West for the benefit of all.

For these organizations, the intern program provides the problem-solving talents of student manpower while making the resources of universities and colleges more available. For institutions of higher education, the program provides relevant field education for their students while building their capacity for problem-solving.

WICHE is an organization in the West uniquely suited for sponsoring such a program. It is an interstate agency formed by the thirteen western states for the specific purpose of relating the resources of higher education to the needs of western citizens. WICHE has been concerned with a broad range of community needs in the West for some time, insofar as they bear directly on the well-being of western peoples and the future of higher education in the West. WICHE feels that the internship program is one method for meeting its obligations within the thirteen western states. In its efforts to achieve these objectives, WICHE appreciates having received the generous support and assistance of the National Endowment for the Humanities, the Washington State Office of Community Development CETA Program, the Colorado Department of Labor and Employment; and by more than one hundred and fifty community agencies throughout the West.

For further information, write Bob Hullinghorst, Director, Resources Development Internship Program, WICHE, P. O. Drawer 'P', Boulder, Colorado 80302 or call (303) 443-6144.

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